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THE BUILDER

A RECORD OF ARCHITECTURE AND CONSTRUCTION.

VOL. CXIV.—No. 3926. MAY 3, 1918.

THE COTTAGE POLITICAL AND THE COTTAGE STRUCTURAL.

THE present housing question has two main aspects, the one political and the other structural. Both affect architects and builders—the first in their capacity of citizens and taxpayers, the second in their own avocations. Our present rulers in many ways resemble skilled jugglers and are able to settle controversial and difficult issues with a stroke of the pen and a sublime assumption of infallibility, while they frequently hesitate over matters which to the average man appear clear and obvious. If we play with loaded dice it is easy to cast double sixes, and if we suppress all arguments excepting our own it is easy to come to inevitable conclusions. In the case of housing the authorities start upon the assumptions, (*a*) that private enterprise has failed, (*b*) that an immense amount of housing is required which must be provided without delay, probably by postponing the execution of other work, (*c*) that it is impossible to obtain economic rents for new buildings erected after the war. The conclusion from these data is that the necessary housing must be carried out by public authorities and paid for out of public funds, and the country must be saddled with further burdens of taxation. In spite of repeated pledges, the Government which is capable of thinking out and preparing a new Home Rule Bill in a fortnight, though it takes months to come to a conclusion on a comparatively simple question of Man Power, cannot find time to repeal or amend the Finance Act of 1909, which first halved and afterwards practically stopped the provision of housing by private enterprise, neither has it time or inclination to enquire into the subject of rating, though a wise revision of the present law might alter the whole aspect of the problem as far as the adoption of municipal schemes is concerned. A settlement of these points might mean a revision of the whole proposals and so does not appeal to the Government experts.

With regard to the statistics which have been furnished they should, as we have stated, be looked on with some doubt till we are able to say (*a*) what amount of emigration will follow the war, (*b*) the position which our industries will occupy and their future location, (*c*) the extent to which they will be carried on in new munition centres, while with regard to the question of economic rents we believe that no one has yet been able to explain why it is that wages which are advanced when great increases in the cost of living take place should not be similarly advanced when great increases in the cost of the provision of housing become a factor in the question. To do anything else is, as we have stated, to give a bonus to two classes—the employers of labour so housed, and to the workers—at the expense of the rest of the community, and is shifting what should be an item in the balance sheet of certain industries and debiting it to other and independent concerns. It is as irregular as transferring the cost of a business firm's stationery to the national exchequer. All the foregoing are reasons on account of which we consider the present crusade is entirely unsound and unstatesmanlike.

We now come to the question of the cottage structural. Mr. Murray has advocated the use of central heating with a view to the saving of labour in the dwellings of the future, and has indicated a preference for the adoption of gas or electricity for purposes of heating. Mr. Barker, in a letter in this issue, gives reasons, and figures in support of them, to show that neither method can be expected to produce satisfactory financial results at present in this country. The point involved is one for experts and scientists, the results of whose investigation we should accept, but there is an issue which is simpler and on which we can form a sound opinion, which is whether we think that in coming times people will be satisfied to depend, as in the past, on the provision of open grates as the only means of heating small houses; for, if not, there yet remain heating by means of hot water and by means of hot air, neither of which is so expensive in fuel or in labour as the present methods employed. If we definitely come to the conclusion that open fires are so pleasant and so desirable as to be worth the extra labour caused, or if we assume that the health of the community is inseparable from the exposure of the body to the rigours of cold which are often experienced in the ordinary small house, there is no more to be said, and we shall be justified in hugging old traditions. All we say is that this is the right time for decision and for settlement. We also question whether our sinks and other fittings are as perfect as they might be from the point of view of labour saving, and this, too, is a time when we might consider such points. With regard to the main question of structure, we gave in our last issue an admirably-expressed letter from Mr. Baillie Scott, the form of which is admirable, but which does not entirely convince us on points of fact. We would suggest that if Mr. Baillie Scott were compelled by hard force of circumstance to adopt new methods, he and other skilled designers could endow them with attractive form, while we doubt whether, with all due regard to art and tradition, our forefathers who produced the work which we, with Mr. Baillie Scott, admire would be quite as adamantine as he is on the question of change.

Nothing on the old lines could be better than a great deal of the work which has been produced by the County Council of London, and by many skilled designers, but we question if it is the last word in design. If it is, well and good; let us adhere to it; but do not let us prove ourselves averse to the consideration of the problem on other lines. Probably all of us who appreciate great painting would like to possess works by Velasquez or by Titian, but as we have not means to compass our ambitions we may be well satisfied to own works by lesser painters, or even good engravings, and so it is with the simpler and humbler class of dwellings. We should like to have the best result æsthetically if we can, but questions of finance and of utility must be considered; nor must we shut the door too decidedly when the question of changed conditions is mooted. We have illustrated the best of the series of designs recently submitted in the various housing competitions held, and given some admirable sketches of the results by Mr. Raffles Davison, and would ask our readers whether they are completely satisfied with the results obtained, or whether they do not think it probable that some interesting and useful data might be obtained by a reconsideration of the problem of housing on some such new lines as we have indicated; and this is what we define as the problem of the cottage structural, on which we should like to elicit some of our readers' opinions.

Some of our correspondents criticise designs we have illustrated, but this, too, is beside the mark unless criticism is on very broad lines. Assuming that we come to the conclusion that central heating is desirable, that the planning and arrangement of bedrooms might be improved, that other materials than brick, stone, tiles, or slates be used in building, the results obtained will very largely depend, as they always have depended, on the skill of the individual designer. If the result is that we can do no better for the community with all modern appliances than was possible in the past, the controversy is ended; if not, we should have the courage to try experiments. But the issue cannot be settled by small criticisms as to the position of doors and windows and the character of the elevations of individual designs, which are what many seem to confine themselves to.

NOTES.

The Royal Academy. WE shall give our reviews of the year's Royal Academy Exhibition next week, but a cursory survey in the Architectural Room enables us to appreciate the good effect of the more sparing distribution of work which characterizes the year's exhibits. It constitutes an effective plea for a greater amount of space in normal times, both for architectural works and for sculpture, the exhibition of which suffers so much from the want of room so freely given in the corresponding exhibition at the Salon. Among the after war schemes advocated as war memorials, there is a case to be made out for the building of a new Academy of Arts in which the sculptor and architect's work might be allowed elbow room, instead of being housed like the unfortunate lodger in a sea-side resort at the height of its brief season.

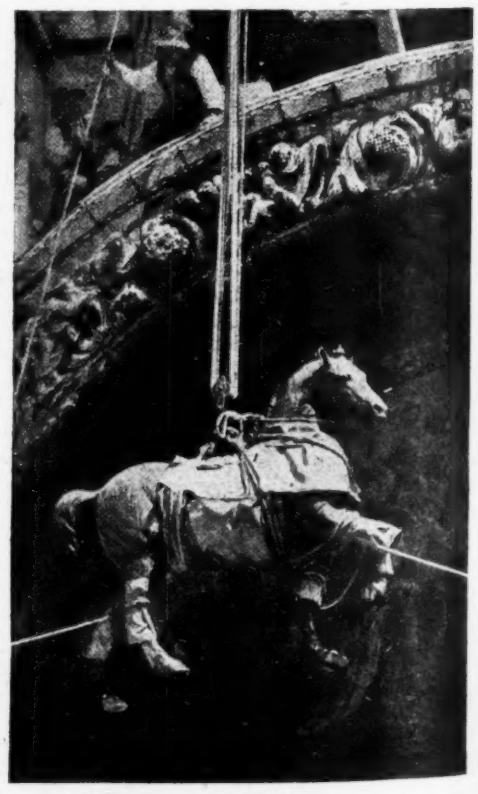
The Exhibition of the Royal Water Colour Society. THOUGH the summer exhibition of the Royal Water Colour Society hardly rises to the very exceptional level of that held last year, it is among the best collection of pictures we have seen for a long time. There is practically nothing which should have been omitted and many works of outstanding excellence. The veteran Mr. Albert Goodwin sends a fine series of architectural studies rendered in his characteristic manner, among which are "Wells" (No. 1) and "Benares" (No. 156), while "The Unknown Land" (No. 8) and "The Valley of Chamonix" (No. 30) show his skill in the delineation of effects of atmosphere and distance. Mr. R. Thorne-Waite, in "The Downs at Corfe" (No. 2), shows much skill and delicacy. Mr. Matthew Hale sends some admirable pictures, among which may be mentioned "Sunset at Ronda" (No. 17), seen bathed in the warm evening light. Mr. Robert Little's work is among the best of that shown, and is well shown by the contrast between "Dalclathick Glenartney" (No. 11) and "Hemingford Grey Church," a quiet little scene with a belt of willows beside a stream. Mr. Eyre Walker sends some very fine water colours, including a magnificent view of a stretch of Scottish moorland, entitled "On Galloway Moors" (No. 34). Mr. Russell Flint gives two characteristic pictures of water and bathers, and Miss Alice Macmillan Swan a charming little composition entitled "Homage to Botticelli's Venus" (No. 90). Altogether the exhibition is one of the best we have seen and all should visit it.

The Friday Club. THE exhibition of the Friday Club at the Alpine Gallery shows that the extremists in art are in a depressed mood, but not that they have any inclination or intention of retracing their steps. However, they are obviously incapable of climbing the heights of absurdity and giving us a feast of humour. Even Mr. Mark Gertler is restrained, though we have a delightful little study of a fruit stall with neat pyramids of fruit piled up at impossible angles. In his figure studies he shows that he can draw when he chooses to condescend to do so. His shop window idyll suggests a dim vision of Bluebeard's wives. We do not know whether they are meant to be dummies suspended like a bunch of carrots, as all is hidden by the haze of romance or of realism, we don't quite know which. Mr. Nevinson sends a number of slight realistic scenes from the war zone, and his work here, as elsewhere, indicates that he has severed himself from the collection of advanced prophets of a new era to whom his name has given a distinction which the average talent and inspiration of the group hardly deserved.

The Late Captain Gascoyne's Water Colours. THE exhibition of the late Captain Gascoyne's drawings, now on view at the Architectural Association, emphasizes the sense of loss which the whole profession must feel of one of the ablest delineators of architectural works whom we have ever had. It is not too much to say that Captain Gascoyne would have earned a prominent position as a water-colour painter had he elected to follow that vocation. The works exhibited are water-colours of the first merit, and the fact that the majority of them depict architectural subjects is purely accidental; they are as far removed from the ordinary good architectural sketches as alpha is from omega. A large number of them have been sold for the benefit of Mrs. Gascoyne, but there are still many which have not yet found purchasers—as we hope that they will—to increase the proceeds of of the sale; and we are sure that those of the profession who can afford to expend a few guineas will be amply rewarded by the possession of some of these fine works. In Captain Gascoyne architecture has lost one who would have been certain to do it both honour and credit; he had every reason to expect a great future; and his untimely death is a great loss to all of us. The exhibition will, we are told, be open for another fortnight, and those unable to visit it who think they would like to buy works, should communicate with Mr. Robert Atkinson, at the Architectural Association.

Decimal Currency. WE note that a private Bill is to be introduced in the House of Lords in favour of the immediate introduction of the decimal system as applied to currency, the change to be in the values of our copper currency which it is proposed to divide into 100 mills, equalling the present shilling; while half-crowns, threepenny-pieces, and other silver coins will be withdrawn. With the substitution it is proposed to do away with our cumbrous copper coinage. The bill is supported by the bankers and other important interests. We wish the proposal had been extended to weights and measures, but we should be satisfied if the thin end of the wedge could be introduced, for the rest would follow. It is curious to find that really useful and progressive measures are usually introduced through the medium of the despised House of Lords, while the popular assembly satisfies itself by indulging in sterile and dangerous political controversies; but the Upper House has over and over again proved its right to existence by the useful work it has done for the people rather than for parties.

A Correction. IN reference to our note last week on Major Maurice Webb's distinction, we are informed that if he safely returns he has no intention of relinquishing his work as an architect. We are sorry to have made a mis-statement, but glad that we may hope Major Webb will resume his former occupation when peace comes. Our position when that hoped-for event takes place will be very similar to that of the United States after the War of Secession in the early 'sixties of last century, as the great bulk of the population of military age had been enrolled in either the Northern or Southern Armies, with the result that an amazing number of Americans retained their military titles in civic life and an American accent and military title are almost inevitably connected in our recollections of the older class of travelled Americans.



The Horses being lowered, S. Mark's.
(By permission of Messrs. Alfieri & Lacroix.)

The Colleoni Monument at Venice.

THE BRONZE HORSES OF S. MARK.

WE give here a clever sketch of a famous Venetian monument, that of the Condottiere Colleoni; the figure, mounted and in panoply of war, of the leader of the armies of the Venetian Republic; which may fairly claim with that of Marcus Aurelius at Rome and of Gattamelata at Padua to be one of the greatest equestrian monuments of the world.

The will of the Condottiere bequeathed his statue to the Republic on the condition it should stand within the Piazza of S. Mark. A subtle rendering—almost a subterfuge—of the Senate of Venice evaded this condition, which was, in fact, already vetoed by the edicts of the Republic, and set it on its present *locale*. Unable from its weight and its monumental character to be removed—like those bronze horses which I am about to mention—to a place of safety, it has been secured, as will be seen, by piles of sandbags, which almost suggest the forms of a Gothic design.

First among the objects in Venice to be placed in safety were the famous bronze horses of S. Mark, which for centuries have been the greatest ornament of the façade of her ancient Basilica.

There was a double reason for this—for even apart from their great artistic merit, both in themselves and as a part of the external decoration, any accident to them might, from their own weight, have endangered the security of the façade itself.

It was not by any means the first journey they had made. Originally placed upon one of the great Rome triumphal arches—probably that of Nero or Trajan—they had migrated to Byzantium when Constantine made that city his new capital of the Eastern Empire, only to be at length taken from their home there, perhaps upon the famous Hippodrome, to adorn the Cathedral of Venice, then rising to become the sea-power of the Mediterranean.

Even then their migrations were not completed. When Napoleon struck down the Most Serene Republic of Venice and destroyed her free institutions, the horses of S. Mark were carried off captive to decorate the Arc du Carrousel without the Tuileries at Paris; and a curious old print—which I have before me in a good reproduction—shows them there, with the Tuileries in the background, and before it the soldiers of the victorious First Consul occupied in parade drill.

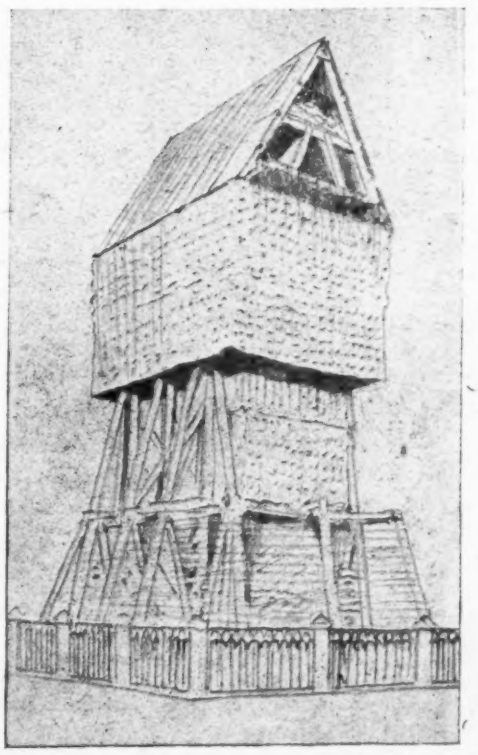
With the fall of the Napoleonic Empire they returned to Venice, brought back in triumph by the Austrian Emperor, Francis I., who came to the city of the Adriatic himself to receive them with his Minister, Prince Metternich. On December 13th, 1815, they were brought in state from the Arsenal, with a salute of twenty-one guns, to their old place upon the façade of the Basilica. The Emperor himself watched their arrival from the Loggia beneath the Campanile; and set up over the entrance of S. Marco the legend of their return, in terms laudatory to his own share in it:—*Quattuor equorum signa a Venetis Byzantio capta a. MCCIV. . . . quae hostilis cupiditas a. MDCCXCVII abstulerat Franc. I. Imp. pacis orbi datae trophaeum a. MDCCCXV victor reduxit.*

It will be seen that I have slightly abbreviated the inscription, but have kept the dates which are stated as 1204 A.D. from Byzantium, 1797 from Venice to Paris, and 1815 from Paris to Venice again.

And it was in 1915, just one hundred years later, that they started on their travels again, upon a brilliant morning of spring sunshine on May 27, to find a haven of comparative safety in Rome.

Messengers of victory, who have followed the rising star of empire, and have now for many centuries become a part of Venice herself, we hope they may return in happier days than these to find the lovely city of the Adriatic still intact; and the new kingdom, of which she is proud to be a part, taking its true and proper place as one of the great powers of the Mediterranean, and one of those free nations who are going to build up a better future for the world.

S. B.



The Colleoni Monument as now protected.

CORRESPONDENCE.

The Future of British Architecture.

SIR,—Sir Aston Webb, in a letter published recently in your columns, suggests to the Institute Council that they should appoint a strong committee, with wide powers and reference, to consider all the subjects which might be included in the above comprehensive heading, and to put forward a complete scheme of reconstruction for consideration before the end of the war.

Sir Aston Webb appears to have overlooked the fact that fifteen months ago the Executive Committee of the Architects War Committee appointed the Professional Employment Committee and the Council of the Architectural Association as a committee charged to report to the Executive Committee upon all questions affecting the position of architects after the war.

This committee, which is known as the Architects Re-organisation Committee, is a very representative one, consisting of members of every architectural society, and including the presidents of all the societies allied to the R.I.B.A.

Since its inception this committee has covered much of the ground indicated by Sir Aston Webb, and its reports have been adopted by the Executive Committee of the Architects' War Committee. In the course of its deliberations the committee has come to realise that re-organisation involves a thorough remodelling of the relationships referred to, and its future programme covers a still wider area, so that at the present moment it is dealing with all questions affecting the future of British architecture.

The committee think it desirable that attention should be called to this, so that any overlapping and confusion may be avoided, as it would seem that Sir Aston Webb's suggestion, if adopted, would lead to the formation of a committee whose functions would be exactly similar to those of the very representative body already in being.

F. R. YERBURY,
C. M. AUSTIN BUTLER,
Joint Hon. Secretaries.

War Memorial Residences.

SIR,—The British public would be very glad to do something to show their gratitude to our gallant sailors and soldiers when they return home from the war, in remembrance of their marvellous patriotic defence of our own and allied countries.

Some people have suggested memorial chapels, church windows, &c., but what benefit are these to men who have fought so bravely for king and country?

May I propose memorial bungalows or cottages, to be erected on plots of freehold land purchased and built by private subscription?

One or more should be erected in every parish throughout the kingdom, and be presented to sailors or soldiers and their families for their occupation, rent and rate free, and without any restrictions, for their and their children's lives.

If a house to house collection were made, every man and woman would gladly subscribe a small amount, and others would help with building materials and pieces of furniture. Possibly landowners would be willing to give or sell cheaply plots of land of not less than ten rods (being 16 plots to an acre), architects, builders, workmen and others would be willing to assist, and boy scouts could do a lot of useful work. Builders' merchants, florists, furniture dealers, and other tradesmen might offer to sell goods on very favourable terms.

Strong committees should at once be formed to carry out this suggestion, composed of all classes and both sexes, whose services should be honorary, and some one would no doubt be willing to offer free rooms for the meetings, and the cost of clerical work should be kept as low as possible.

Possibly, wealthy people might wish to build and furnish such buildings in memory of dear ones they have lost in this awful war.

Officers and others who, in offering their services, have lost remunerative occupations, should not be forgotten.

FREDK. NESBITT KEMP.

Scientific Houses.

SIR,—I was much interested in the letter in your issue of April 12 from Mr. John Murray, and in the plans of the scientific houses and cottages reproduced, which appear to contain many admirable features.

Perhaps you would allow me space for a few comments on the aspect of the matter with which I am especially concerned, as Mr. Murray has had central heating especially in view in making these very attractive designs. I refer to the fuel consumption required for warming and the domestic services.

Generally speaking, I fear that houses built on these lines would be found to be excessively costly in this respect, especially the bungalow. The construction of the buildings and the material proposed for the walls would make them excessively cold. If the amount of heat they would require to make them "livable" were to be provided either by gas or electricity at anything like present prices, or even at any prices within sight of engineering science at the present time, the cost would be utterly prohibitive for the ordinary income of such people as would occupy houses of this size. Further, not only the cost to the consumer, but also the destruction of coal required to supply these agents would be out of all proportion greater than would be called for if the heat were supplied by solid fuel.

I have dealt with this question, as far as it concerns fuel economy in cooking appliances, in the series of lectures which you are now publishing serially.

The idea of supplying what may be called the three heat services to a building entirely by gas and electricity is an exceedingly attractive one, as enabling a great deal of labour and dirt to be dispensed with, and may sometimes be worth while for that reason alone if any cost of labour can be thereby saved. But unfortunately there are certain hard facts which not only do now, but must always in the present state of engineering science, prevent the realisation of this ideal as a commercial proposition.

That is, it is impossible to hope that what may be called "rough heat" can, within a measurable time in the future, be supplied in quantity by either gas or electricity, at anything like the price that is now possible with solid fuel.

A few figures will make the point clear. For the purpose of a clean-cut comparison, apart from any questions of labour-saving, &c., and to show what I mean by "rough heat," let us consider how many heat units can be delivered to hot water from one pound of coal, of 14,000 heat units per pound calorific value, used according to the three following processes:—

(1) Burning it in a good circulating water boiler.

(2) Distilling it into (*a*) gas and (*b*) coke, and burning both the gas and the coke in the most efficient known boiler.

(3) Burning it in a power boiler at an electric generating station, and using the electric energy to heat water.

If used according to (1) we can get at least 9,000 heat units actually *into our water*, the entire amount of which we can use for warming our building, or for hot water supply.

If used according to (2), we should get, as the gross total quantity, from one pound of coal 5 cubic ft. of gas and 0.65 lb. of coke.

	B.T.U. (gross).
From 5 cubic ft. of gas (at 500 B.T.U. per cubic ft.) say ..	2,500
From 0.65 lb. coke (at 10,000 B.T.U. per lb.) say	6,500
Total	9,000

In addition to this there would be certain other chemicals which have a value to the community, but of which we cannot take count in the present discussion.

By the time this 9,000 B.T.U. has been through the water heaters the amount left *in the water* would not exceed 6,000 B.T.U. in all—

	B.T.U. (net).
For the gas, 2,500 × 80 per cent. 2,000 For the coke, 6,500 × 62 per cent 4,000	6,000

If used by the electrical method (3) we have the following figures. Electricity as supplied even by very large companies involves a consumption of 3 lb. of coal for every unit supplied to the customer.

The best practically possible result in the present state of engineering science is perhaps 1¼ lb. of coal per unit delivered, or 2,750 B.T.U. gross per lb. of coal burnt, since each unit is the equivalent of 3,410 B.T.U. and can never be any more. Hence each lb. of fuel burnt in the present day generating station results in 1,140 heat units delivered into the house. Assume that the whole of this heat is actually used and that none is lost. To summarise (per lb. of coal destroyed):—

	B.T.U.
Burning the fuel in a good boiler we get	9,000
Turning it into gas and coke (gas 2,000, coke 4,000)	6,000
Turning it into electricity (usual) ..	1,140
do. do. (best possible)	2,750

It must be observed that these figures are fundamental and cannot be got away from. They are not based on my own or anybody else's opinion, and should always be taken into account in any discussion on the possibilities of gas or electric heating.

It will thus be seen that the only possible economic employment of gas or electricity to replace coal for any purpose is due to the following considerations—

(1) The saving in labour, dirt, smoke, &c., or the increase in convenience is of more importance than the necessary increase in price or the increased destruction of coal.

(2) Actual economy in fuel only occurs in these cases, (*e.g.*, cooking) where the gas or electricity can be employed at much greater efficiency than coal.

Even in those cases there is such a huge margin of difference in cost that a small improvement in the coal apparatus may easily at any time make a coal-fired cooker much more economical than either gas or electricity can possibly be. But even at present for all rough heating purposes (heating rooms and hot water supply, &c.) there is no possibility of either gas or electricity competing with solid fuel, either from the point of cost to consumer or of destruction of the nation's fuel.

For instance, taking Mr. Murray's two-floor house, to maintain a temperature of 60 degs. in the living rooms, and, say, 50 degs. in the bedrooms, when the outside temperature was 40 degs., would require at least 50,000 B.T.U. per hour. This, of course, is quite an approximate figure, as the actual amount of heat would depend partly on local conditions, and would be influenced by many details in the construction of the building. 50,000 B.T.U. are equal to more than 14 B.O.T. units; and with electricity even at one halfpenny per unit, therefore, the cost would be more than 7d. per hour. Multiplying this by twenty-four hours and by six months, during which artificial heat is absolutely necessary, but making no allowance for outside temperatures below 40 degs., which would be experienced on many days, the annual expenditure would therefore be nearly £130 on heating alone.

Of course, it may be argued that all the rooms need not be continuously heated, and that no heat would be required in them at night, but if a building is only heated intermittently the saving of fuel is not in proportion to the number of hours during which the heating is cut off, as during this period the walls, floors, ceilings, &c., become cold and have to be warmed up again before a comfortable temperature is obtained, whereas if the building is continuously warmed only the actual heat loss taking place all the time has to be made good.

Assuming, however, that only two rooms and the central hall with a small amount of corridor space are on an average continuously heated, to maintain some degree of comfort, which Mr. Murray recognises as necessary even in cottages, the cost would still be very high, probably over £40 per annum with electricity at one halfpenny per unit.

Again, with gas fires and gas at 2s. 6d. per 1,000 cubic feet, the annual cost to warm the whole house would certainly exceed £80, or, if the heating were confined on an average to two rooms and the central hall, &c., as above, the cost would no doubt be more than £25.

These figures make no allowance for the cost of installation.

On the other hand, with a modern coke-fired boiler and hot water radiators, the building could be warmed throughout under the same conditions for about £11 per annum with coke at 20s. per ton, or even at 30s. per ton the cost would only be about £16.

This enormous difference, of course, is due to the very great loss of heat involved in the present processes of converting coal into electricity or gas, in addition to which interest and maintenance charges on the extensive plant, mains, establishment, &c., have to be allowed for.

As a central hot water system with a coke-fired boiler entails handling the fuel only in the boiler room and stoking only once in every six to twelve hours (according to weather conditions), its cleanliness, convenience and labour economy are little inferior to gas-fired appliances, or even electricity. These boilers are practically smokeless and therefore do not pollute the atmosphere like open fires.

There is unquestionably a very great future in front of gas as a heating medium but it cannot be as the sole means of heating buildings, even of moderate size. Neither can gas ever be generally used for the economical supply of hot-water in considerable quantity.

For a house to be comfortable as well as economical in every sense we must have a combination of solid fuel, gas and electricity, just as a smith cannot do without a heavy, medium and light hammer.

A point which I think is not always fully realised in connection with the heating of buildings is the large amount of heat lost through the conductivity of building materials, especially in windy weather.

For example, again referring to Mr. Murray's house, the losses of heat from this *on a still day* would be twice as much as is required to warm the air required for ventilation. With 9 in. brickwork the loss would not be so great, as concrete 6 in. thick transmits about 35 per cent. more heat. If architects could design some form of building construction which would minimise this great loss of heat they would render a very great service to the community, as not only would large quantities of fuel be saved, but the cost of heating apparatus would be greatly reduced as much smaller appliances would be required.

A. H. BARKER.

40, Queen Anne's Chambers,
S.W. 1.

SIR,—With reference to your article on "Scientific Houses and Cottages," and drawings illustrating the same, by Mr. John Murray, F.R.I.B.A., surely you do not expect the profession and discerning members of the public generally to accept these ill-proportioned over-windowed travesties of design seriously? "Scientific" they may be, but, to my mind, utterly soulless and pandering to the many catchpenny substitutes for natural and decent material now flooding the market. If these designs represent the best efforts of the "Scientific" school, may we be spared from any further experiments, and let us turn thankfully back to simple and sincere building, letting the architecture take care of itself, and try, while not forgetting the demands of the present age, to catch something of the spirit of design and right use of materials which animated the humblest buildings of the past, at which it is now considered by some of the so-called "Scientific" and "progressive" members of the community fashionable to sneer.

T. FRANK HAWKES, Lic.R.I.B.A.

The R.I.B.A. Cottage Competitions.

SIR,—Most of the competitors, including the authors of premiated designs, have neglected the advantages of placing the w.c. on the bedroom floor, where it would be convenient for the emptying of slop-pails, besides affording a good downrush of water to prevent obstructions in the drain. In many designs the slop-pail could be carried to the w.c. only through the living-room, and it is probable that, in practice, urine would be thrown into the bath.

In many cases space has been lost by forming rooms in the slope of the roof, lighted by dormer windows, when it would afford better protection against heat and cold to carry up the walls, employing a low-pitched roof covered with asphalt instead of a steep one covered with tiles.

I have found sash-windows preferable to casements for obtaining ventilation without draught. As for the practice of dividing windows into small panes shown in most of the designs, it ought to be remembered that the labour of cleaning a window is in proportion to the number of panes in it.

GEORGE H. BLAGROVE.

SIR,—(*a*) In all the home counties premiated designs, bedroom slops will have to be carried through the living-room before being disposed of, unless—as is quite probable when there is a bathroom upstairs but no w.c.—the slops are emptied into the bath, either regularly or occasionally, to save trouble. Is this a matter of indifference, seeing it is only for working-class houses?

(*b*) In nearly every design you show of the "long frontage house"—which, by the rules, was to be one room deep only—these houses are only to half their extent one room deep, the other half being two rooms deep. This may give a better planned house, but is not in accordance with the rule laid down.

(*c*) In Class B first prize, by Mr. Alfred Cox, your sketch does not show the scullery window in terrace house, but it would seem to be necessary to be in the wall overlooking the house alongside. This wall, though at that place an outside wall, is, by the rules, a party wall, and cannot thus be properly allowed to have a window in it. There is also the annoyance to the neighbour and the liability to its being blocked by the neighbour. The rule stating that this house was to be between party walls assumes that it might be in separate ownership.

(*d*) All the designs which you show, except those of Mr. Barrett and Mr. Grant, involve rather excessive cost in roofing, dormer windows, gutters, drain pipes, &c.; but there does not seem to have been much consideration given to cost or to saving of timber.

(*e*) In none of the designs is it proposed to have fire places, chimney breasts and flues, and chimney stacks other than those necessary for the usual open fire. Though the conditions urged economy and new methods for saving cost, none of the competitors have cared to risk departure from the beaten track. Alternative plans were forbidden.

(*f*) It was surely a mistake to require to be in each group two extreme types—the long frontage and the eighteen feet terrace house, a combination seldom likely to be carried out in practice.

S. T.

SIR,—Being much interested in above and pleased to see them, allow me, as a practical person and having lived in this class of house, also well versed in building, to make a few remarks.

The elevations are pleasing and quite in character for simplicity, and not at all costly. It is the ground plan where defects are, especially in the living-room, the most important part of a home for comfort. I see on one plan this room has five doors opening into it. Does the designer think it possible to be comfortable in it? Fancy it in such weather as of last week. Most plans I see have two and three doors to this room and only two plans one door. Fancy the larder door with its open window; also a staircase door. Sure to be draughty as well as inconvenient having to take slops through. Think of the smell too. The ideal room should have one door only and windows on two sides, so as to better catch the morning sun especially, which cheers one up finely. The fireplace, too, is awkward if not placed on narrow side of room. Several have it on long side; this gives such a small space on far side of table. It should be thirteen feet at least. The breaks, too, that some show, are very awkward.

Then as to a bathroom: too much is made of this point; it really is an expensive luxury, and one that many cannot afford. Certainly fit some houses with them. What is more required is a lavatory upstairs in preference, of some thirty feet area and having two basins fitted into a wood shelf, with water laid on and waste pipes. In some cases the rain water could be caught into a cistern, placed so that it could be drawn off to basins. Hot water could be carried up or use a gas geyser. A bath could be placed in this room. Floor be covered with lino; so anyone could have a good sponge bath and be easily cleaned up. This plan would save having washstands in bedrooms, saving cost and room as well; also cleaner and do for all three bedrooms.

Then, again, as to the w.c.: several are planned so that when in use they could be heard in living room and possibly smelt, too. Door to this should be quite outside.

The ideal plan is to build all semi-detached, and with twelve or fourteen houses to the acre twenty feet, at least, can be got between the blocks, which makes so for privacy, and get three aspects, which means more sunshine and air. The cost is no more, as the division wall need not go above ceiling of bedroom; the danger from fire is nil.

One can plan so much better. Have entrance at side; we thus get a living-room in front. How much pleasanter for a woman! One door only, please, to this room, and open into a passage, from which we get access to a larder and to a bed sitting room and to scullery, and to an open staircase under which we have room for a pram or cycle. Scullery is large and has gas cooker and washing boiler. Coal place open in same. Upstairs the houses can be varied—to have two or three rooms, or one house two and other three rooms, with the lavatory or bath room. So, with the bed sitting room below, we get four rooms.

For elevation, I have gables back and front, so enables windows to be placed near to bedroom ceiling; so much better, too, than dormers, which are detestable and expensive. Elevations can be varied with various rough casts, half-timber work, &c., to give the street a pleasing and varied appearance.

Such houses in the country, where transit is costly, could be built without taking scaffolding to and fro. Having a mansard roof saves a lot of this. Should make rough-made ladders do and then utilise them for various purposes. Every point must be saved upon, especially when only two or four built in a village.

COVENTRY.

SIR,—Now that the above has ended, the publication in your paper of the successful designs becomes interesting.

Particularly is this so in the case of two of the plans for similar classes in different areas.

By a most remarkable coincidence these plans, excepting the end houses, are identical with those awarded the First Premium for Class B in the South-West area.

Opinion has been freely expressed that the conditions were faulty, and it certainly now occurs to one that it is a great pity the authors of the many plans submitted in this competition were not requested to put in a declaration that the plans were their own work.

It is said that great minds think alike, and in the above-mentioned instance it would be interesting for the authors of the two sets of plans—seeing that they, the authors, are placed so far apart geographically—to meet and compare notes as to how their respective designs were so coincidentally worked out.

COMPETITION.

An American War Hospital in France.

SIR,—With reference to the plans and description published in your issue of the 12th inst. in connection with the above, it may be of some interest to state that the type of Construction used for the Rockfeller Demonstration Hospital in New York is that of our Registered Portable Sectional Buildings, of which we have supplied and erected large numbers in France and elsewhere.

The system is somewhat unique, as not only are the walls made in sections of 5 ft. units in width, but the whole of the roofs and floors are also made in panelled sections of the same width, thus making a completely portable and easily-dismantled structure.

For HUMPHREYS, LTD.

THE HOUSING QUESTION.

Newcastle Housing Question.

As a meeting of the Newcastle Corporation Housing Committee, it was decided to ask the City Council to agree to the development of 100 acres in the Walker estate for the erection of houses for the workers. A report from the Medical Officer of Health stated that 3,000 houses were needed at once.

Housing in Cornwall.

Reports have been received by the Cornwall County Council Sanitary Committee of the housing requirements of that county, and at a recent meeting Mr. W. B. Snell, the chairman, stated that 1,200 houses are needed in the urban and 600 in the rural districts. It is suggested that the local authorities shall at once proceed to prepare schemes.

Housing and Garden Cities.

The following resolution has been passed by the Letchworth Parish Council in connection with the granting of urban powers to the town:—The Letchworth Parish Council, being the first public authority in the first garden city, places on record its confidence in the general principle of development on which the town was founded. Experience has shown that the housing and industrial conditions provided in the town have an immediately beneficial effect upon the health and well-being of the residents; and it believes that the adoption of the principle of building such towns, as a means of dealing with the new housing problem, would be to the advantage of national industry, and a practical step in social progress.

The Housing Problem and Rating.

Dealing with the housing question, at a meeting held by the British Women's Temperance Association, Liverpool, Lord Leverhulme, who presided, said the present shortage of houses especially those of the weekly rental, was not caused by the war, though it might have been accentuated by the war. The causes were the effect of Acts of Parliament relating to houses, our system of rating, and the working-man himself in his policy of restriction of output. A Government scheme of subsidy tended to pauperise the working-man; in fact, put him in a sort of alms-house. To solve the problem we did not need any doles from the Government at all, and rating should be abolished. In its place we should have local income tax—that was, taxation on industries, salaries, and wages in the district. A proper system of housing was at the root of all social well-being. We might build churches and chapels and public halls, but if people who came into those churches went back into slums what did it matter?

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ILLUSTRATIONS.

Drawings by the late Captain Gascoyne.

The two drawings by the late Captain Gascoyne are from the exhibition of his works at the Architectural Association, and are referred to on p. 264.

The L.G.B. and R.I.B.A. Cottage Competition.

We give in the present issue the four premiated designs in this Competition (Northern Area). In Class "D," the first premium has been withheld, because a design had been submitted by the same competitor in another area. In previous issues, we have published the premiated designs in the Home Counties area, and the Manchester and Liverpool and North Wales area.

OBITUARY.

Second-Lieutenant T. Silver.

Second-Lieutenant Thomas Silver, R.G.A. who has been killed in action, aged 39, is the third member of the Birmingham City Council who has fallen in the war. He was an architect and surveyor by profession, and joined the Army eighteen months ago, and was posted to the R.G.A. He was given his commission about three months ago, when he returned to the front.

MEETINGS.

MONDAY, *May* 6.

Architectural Association (35, Bedford-square, W.C. 1.) — Ordinary General Meeting, at 5 p.m. Announcement of Council's proposed nominations for Officers and Council, session 1918–19.

THURSDAY, *May* 9.

The Concrete Institute.—(1) Ninth Annual General Meeting; (2) Mr. A. Alban H. Scott on "Reinforced Concrete Ships," with lantern illustrations. 6 p.m.

British Science Guild.

The British Science Guild is organising a comprehensive exhibition of products and appliances of scientific and industrial interest which prior to the war were obtained chiefly from enemy countries but are now produced in the United Kingdom. The Exhibition will be held at King's College, London, for four weeks during the coming summer. The President of the Guild is the Rt. Hon. Lord Sydenham, G.C.S.I., G.C.M.G., G.B.E., F.R.S. The Organising Secretary to the Exhibition is Mr. F. S. Spiers, 82, Victoria-street.

GENERAL NEWS.

Royal Academy Elections.

Mr. Gilbert Scott, architect, and Mr. Philip Connard have both been elected Associates of the Royal Academy. Had we been asked to suggest an addition to the ranks of the Academy, we should have suggested the name of Mr. Gilbert Scott, and it is an additional pleasure to be able to congratulate both the Academy and Mr. Scott on his inclusion in the ranks of the Associateship. It is now some years since the Liverpool Cathedral Competition was decided in Mr. Scott's favour, and it will be remembered that grave doubts were felt about the wisdom of entrusting so young an architect with so great a work—a difficulty which was overcome by the association of Mr. Bodley with the winner. Since Mr. Bodley's death, we have all realised that Mr. Gilbert Scott's ability is equal to the greatest works that can be given to an architect, and it is doubtful whether any of our mediæval cathedrals will be more instinct with imagination and grandeur than the great building which already dominates Liverpool. Although the only portion completely finished is the Lady Chapel, none can see it without feeling that in the designer's hands the fancy and imagination of the Middle Ages live again, and Mr. Scott has succeeded in introducing into his work a note of scale hitherto unknown in Gothic detail, without in any way impairing the charm and character of the work. Though he has carried out many minor works, which do him credit, it is at Liverpool that we can realise what his capacity is, and it is doubtless Liverpool Cathedral which has secured his well-deserved election to the Academy.

Royal Academy Exhibition.

As the galleries in Burlington House are not required for the annual dinner, which will not take place this year, the President and Council of the Royal Academy of Arts have decided to make the cards of invitation to the private view available for either Friday, May 3, or Saturday, May 4, from 10 a.m. to 7 p.m.

War Pictures for East-End.

The exhibition of British Battle Photographs in Colour which has drawn thousands of people to the Grafton Galleries will be transferred to the People's Palace, Mile End, where it will be opened to the public by Princess Patricia of Connaught on Monday, May 6. Arrangements have been made whereby all the surrounding boroughs will lend their civic support to the exhibition at Mile End.

The Leicester Galleries.

One of the losses that Art has sustained in the war has been that of Henri Gaudier-Brzeska, the young Franco-Polish sculptor and draughtsman, who was killed in action at Neuville St. Vaast in June, 1915. A memorial exhibition of his sculpture and drawings is to be held at the Leicester Galleries, Leicester-square, from May 10 onwards. The Victoria and Albert Museum and several French Museums possess specimens of this artist's work, and loans have been obtained from many good private collections for the forthcoming show.

Linen from Old Plans.

In November, 1917, an appeal appeared in the press from Sir Francis Fox, for old plans, drawings, and cloth tracings from which to manufacture brown holland, linen, calico, muslin, and (from the cloth tracings) nainsook for hospitals. There was an immediate response from the railway companies and various firms and private individuals. The large quantity of material recovered has been of great value to the hospitals. Many of the plans date back 55 years, and their fabric is of much higher quality than can be obtained to-day. The drawings are immediately effaced, so that secrecy is secured. Sir Francis Fox's address is Alyn Bank, Wimbledon, S.W. 19.

The Wolseley Statue.

The small model of the full-sized statue of Field-Marshal Lord Wolseley, designed by Sir W. Goscombe John, R.A., and destined after the war to be erected in Trafalgar-square, will be exhibited at the forthcoming exhibition of the Royal Academy.

Proposed Water Power Mills, Lochaber.

Strong opposition was expressed in the House of Lords on Tuesday to a scheme promoted by the British Aluminium Company to erect water-power mills at Lochaber, and, although it was supported by the Board of Trade and the Ministry of Munitions, it was withdrawn. The scheme was to cost £1,500,000 and the Earl of Kintore said that as the mills would not be built until after the war our present resources in aluminium would not be affected. Lord Balfour of Burleigh argued that the Bill was unjust to the local community in the valley from which the water would be taken. If, said the Marquis of Crewe, this was a "key" industry, it should be in public hands and not be run solely for the benefit of a private company.

Edinburgh Architectural Association.

The annual general meeting of the Edinburgh Architectural Association was held in the rooms at 117, George-street, Edinburgh, on the 17th ult. The President, Mr. T. Forbes Maclennan, A.R.I.B.A., in his valedictory address, spoke of the work being done by the Council of the Institute of Scottish Architects, of which the Association was now a chapter. They were rapidly getting their house into order in view of the many changes and great opportunities that would undoubtedly come to their profession at the close of the war. In all they were doing they kept before them the interests of those members who were on active service, to whom they owed a debt which they could never repay. The following office-bearers were elected: President, Mr. T. P. Marwick, A.R.I.B.A., F.S.I.; Past President, Mr. Maclennan; Vice-Presidents, Mr. W. T. Oldrieve, F.R.I.B.A., and Mr. T. Aikman Swan, A.R.I.B.A.; Hon. Secretary, Mr. James Kerr, F.F.S., 122, George-street; and Hon. Treasurer, Mr. W. G. Walker, C.A.

The Wreck of Reims.

Reuter's Special Correspondent with the French Army writes, under date of Saturday, April 20:—"This afternoon I spent wandering through the ruined streets of Reims, noting the havoc wrought by the last bombardment. The heart of the ancient city is a mere labyrinth of shattered walls and burnt-out dwellings. The town is now for all practical purposes as much a ruin as Ypres or Babylon. The cathedral has been hit again and again, but only by shell splinters, and is much as it was six months ago. Joan of Arc still rides on her bronze charger in front of the cathedral. As far as the cathedral is concerned, there is every reason to hope that it will be preserved. That it will escape further damage is too much to hope for. In the end the cathedral and the statue will, in all likelihood, be all that remains of ancient Reims. All that was old, beautiful or prosperous in the city, excepting the cathedral, has been burned or blown to rubble. The mediaeval buildings on the south side of the cathedral have disappeared. Among them were the Archbishop's Palace and the house of the Counts of Champagne, in which the Coronation feasts were held after the new king had been crowned in the cathedral. The fine Place Royale is a mere wreck. Of the eighteenth century Town Hall, only the outer walls remain."

LEGAL SECTION.

NOTES ON CURRENT CASES.

Emergency Legislation. Soldiers' Leases.

In our legal section, December 21, we drew attention to the case of Tozer *v.* Viola, which raised the question as to what was the position of an original lessee under a lease of which he has made an assignment, when the assignee, upon being called to the Colours, has had his tenancy terminated under the Courts (Emergency Powers) Amendment Act, 1916, Section (2). Another case, Revill *v.* Bethell (*The Times*, March 21), on the same point has recently come before the Courts and it requires consideration in the light of the decision of the Court of Appeal in Tozer's case. As regards the lease the facts are much the same in the two cases. The applicant Revill was the assignee of a lease granted by the respondent Bethell to one Tiltman in 1904 for eighteen years. Tiltman had assigned it to Revill in 1910. Revill was called up for service and he applied to the County Court under the above Act to have his tenancy determined from June 24, 1917.

The County Court Judge made an order determining the lease on condition that the applicant paid the rent due to March 25, 1917, and that no action should be brought by any person against any other person for breach of any covenant contained either in the lease or the assignment, but liberty was given to the respondent to sue Tiltman for the quarter's rent from March 25 to June 24 if the respondent thought he had any right to do so.

The respondent, the lessor, appealed on the grounds that the County Court Judge had no jurisdiction to authorise the applicant to give a retrospective notice to determine the tenancy nor to relieve the applicant from his legal duty to pay arrears of rent; that he had no jurisdiction to deprive the respondent of his right of action against the applicant and Tiltman for breaches of covenant before the determination of the tenancy nor to relieve Tiltman of his liability under the lease.

The Court decided that the County Court had power to decide these points and the appeal was dismissed.

The case is of very considerable importance as it goes much further than Tozer's case, for it decides some points which, although mentioned to the Court of Appeal in that case, had not to be adjudicated upon, and therefore the judgment requires consideration. In Tozer's case only the lessor and the assignee of the lease were before the County Court, the original lessee not having been made a party to the proceedings, whereas in this case the course laid down by the Court of Appeal as proper to be observed had been adopted and all parties interested were before the Court. The decision in this case had been suspended until the decision of the Court of Appeal in Tozer's case had been delivered and judgment was given September 25, 1917, and that judgment appears to have determined the lease altogether, releasing all parties from any further liability thereunder (except for the small point as to the quarter's rent), including the liability placed upon the assignee to indemnify the lessee against the rent and covenants contained in the lease. As regards this latter point it was not contended that the Court had not power to do so.

This point was also mentioned in Tozer's case, but not decided by the Court of Appeal, as the lessee was not a party to the original proceedings in the County Court, but it is a point of the greatest importance as if the lessee was held liable to the lessor for rent or breach of covenant and he could come upon the soldier tenant as assignee under his indemnity, then so far as the soldier assignee was concerned, the legislation purporting to be passed in his interest would be rendered nugatory. Tozer's action was somewhat unusual, for it was admitted in that case that the effect of the order in the County Court was to determine the lease as between the original lessor and the soldier assignee, but the lessor as against the lessee was maintaining that the lease was subsisting and that he was liable for the rent and to perform the covenants, and in these circumstances the lessee brought the action claiming a declaration that the lease had been determined as against him and that the tenancy created by it was at an end.

The order made by the County Court Judge in Tozer's case specifically stated that "Nothing in this order shall affect any question as to the respective rights and liabilities of the Respondent (the lessor) and Tozer (the lessee)," and in these circumstances the Court of Appeal held that it was not open to Tozer to claim that the order in favour of the assignee released him from liability as lessee; the Court also, as the assignee was not party to the proceedings then before it, declined to express any opinion as to the liability of the assignee to the lessee on the indemnity.

Thus it will be seen that both the points now decided in Revill's case were left open by the decision in the Court of Appeal, but certain dicta were delivered by the Lords Justices, and the learned Judge who decided Revill's case has relied upon certain expressions in Lord Justice Warrington's judgment. We ourselves do not find any support for the view he has adopted that the Court can determine the liabilities of all parties under the lease in the judgments delivered by the other two Lords Justices, and we may point out that the section of the Act (section 2) appears only to deal with the tenancy to which the soldier is a party:

"Any officer or man of His Majesty's Forces who is the tenant of any premises under a tenancy from year to year or for any longer period may apply to the County Court . . . for leave to determine *such tenancy*, and upon any such application being made the Court may, in its absolute discretion after considering all the circumstances of the case and the position of all the parties by order authorise the applicant to determine *the tenancy* . . . and thereupon *such tenancy* may . . . be determined."

This is an exceptional measure of relief and should be construed strictly, and we should submit that the section applies only to the soldier's tenancy, as it specifically says that it is "such tenancy" that alone can be determined after considering how the determination of that tenancy will affect the position of all the parties concerned in that tenancy.

Whatever may be the construction put upon the section as a question of law, as a matter of convenience it will probably cause less real hardship as construed by the Court in Revill's case, and should the question come before the Court of Appeal it will be interesting to see how they view it. If, as is quite certain under the section, an assignee can be relieved from the lease when called to serve with the forces, it is better that all parties to the lease should be brought before the Court and that the lease should be terminated on terms for good and all, for otherwise the position of the assignor of a lease may be one of extreme hardship. The lease may have been assigned years before the application is made by the assignee, and the assignor who has assigned with the leave of the lessor and who has taken an indemnity from the assignee has for a long period considered himself free from any possible liability in respect of that lease, if the assignee is solvent, and he may have entered into further commitments in relation to another property.

It would be a real hardship in such a case that the assignor after the lapse of a long period should find himself once again saddled with liability to the lessor under the original lease simply because his assignee had been called to serve.

If all parties are before the Court and the Court can determine the original lease, and is careful to do so on terms fair to all the parties, the hardship is reduced to a minimum, for the assignee can be put on terms as to breaches of covenant committed during the time he has held the lease and he should have satisfied himself that they were performed at the time he took the assignment; the lessor by the order of the Court will be put in possession of the lease and thus will not be seriously damnified, and the assignor of the lease will not be placed in the position of finding an old liability revived. It is a pity that the Statute was not drawn in terms which would more clearly indicate that it is the original lease which can be determined, but the decision now given in Revill's case has, unless it is appealed against, given this interpretation to the section.

The Public Authorities Protection Act.

The Public Authorities Protection Act is a piece of legislation that from time to time has received much criticism, first from the point of view as to whether protective legislation of this nature is desirable at all, especially when so many of the public authorities carry on functions as trading companies, and, secondly from the manner in which the Act is drafted.

In the recent case Clayton *v.* Pontypridd Urban District Council (1918 1 K.B. 219) the question was raised whether the Council was within the protection of the Act in fixing a gas meter. A tenant had taken a house and had notified the Council, the defendants in the case, that she required a supply of gas, the gas having been cut off whilst the house was unoccupied. The tenant also entered into an agreement with the defendants to have the gas supplied through a "prepayment meter," and the defendants sent a plumber to fix the meter. In the course of fixing the meter an escape of gas occurred, and a woman employed by the tenant of the house was injured by an explosion, caused, as the jury found, by the negligence of the defendant's plumber.

This woman was the plaintiff in the action, and as her injuries were not known to her to be as serious as they ultimately proved to be, she did not commence the action until more than six months had expired from the date of the accident; this, at least, was the allegation put forward for the delay in bringing the action, but the case as reported did not turn on the facts, but solely on the question whether section 1 of the Public Authorities Protection Act, 1893, afforded a defence to the action. That section is to the effect that where any action is commenced against any person for any act done in pursuance or execution or intended execution of any Act of Parliament or of any public duty or authority or in respect of any alleged neglect or default in the execution of any such act, duty or authority, the action shall not lie unless it is commenced within six months next after the act, neglect or default complained of, or in the case of a continuance of injury or damage, within six months next after the ceasing thereof.

The Council, under the Gasworks Clauses Act, 1871, were required to supply gas, to lay supply pipes, and to supply meters, but the Act did not specify the fixing of meters, and the Plaintiff contended that therefore the act complained of was not done or neglected to be done under the protection of the statutory authority, but the Court held that, as the gas could no more be used without the meter than without the pipes, the defendants were acting under their statutory duty.

It is to be noted that under the Gasworks Act the defendants were empowered to require owners or occupiers of premises to use meters.

The question as to whether the act or default complained of is one done or omitted to be done in pursuance of statutory powers is not an easy one to determine, and this point was considered at some length by the House of Lords in the case of Bradford Corporation *v.* Myers (1915 A. C. 242), which will be found discussed in *The Builder*, November 26, 1915.

In that case the House of Lords disapproved a distinction that had been made in some former

decisions of courts of inferior jurisdiction—that the Act applies only to actions for tort and not to actions arising out of contract, and held it applied whether the action was founded on contract or tort; but they held also that the test to be applied to ascertain whether the section applies, is, to see whether the act out of which the action arises is an act done in the execution of a public duty.

Many public authorities possess statutory powers to do certain things and which enable them to perform them without acting *ultra vires* but this is not sufficient to bring them within the protection of the Statute. To come within the Statute they must be performing some function that the public has a right to demand. In the case before the House of Lords the defendant corporation were authorised by Statute to sell coke, but they were not compellable to supply coke in the same manner as they were bound to supply gas under the Statutes to the public; the Act said that they *might* dispose of coke. One of their employees, instead of shooting the coke into the cellar, fired it through the plaintiff's shop window, and although the action was not commenced within six months the House of Lords held the Statute not to apply.

Another case strongly approved by the House of Lords in the latter decision is Sharpington *v.* Fulham Guardians (1904 2 Ch. 444), and this is a case, not of tort like the Bradford Corporation case, but one of contract.

The Fulham Guardians had a public statutory duty put upon them to provide a receiving house for children of the poor and they contracted with a builder to erect the house. A dispute arose in connection with the work under the contract and the defendants set up the Statute as a defence, but the court held that although it was *intra vires* for the defendants to put out the contract the action did not arise out of the duty owed to the public in connexion with the receiving house but out of the private contract, and the Statute did not apply.

Examples of cases where the duty is owed to the public are where commodities like gas electricity, or water have to be supplied, or travelling facilities, such as tramways; and in performing these duties the Public Authority is within the Statute. From the foregoing observations it will be seen that the decision in Clayton *v.* Pontypridd Urban Council is certainly very near the line; the Council were not compelled to fix the meter, but they were compelled to supply it; but the act complained of did not arise out of the supply of the meter, for instance out of some defect in the meter, but out of carelessness in fixing it; and the distinction drawn by the learned Judge between that case and the Bradford Corporation case in the House of Lords, is not very easy to follow.

LAW REPORTS.

OFFICIAL REFEREE'S COURT.

Watson & Ellwood v. Davis.

In this action, which was decided on Monday, April 15, after a hearing which occupied several days, Messrs. Watson & Ellwood, builders, of Lordship-lane, Dulwich, sought to recover from Mr. Tom Davis, of Tulse Hill, the sum of £124 9s. 3d., balance of account for work done and materials supplied in alterations and repairs of premises at 168, Gordon-road, Peckham, of which Mr. Davis was the owner, formerly used as mineral water works, and which it was desired to convert into printing works. The plaintiffs' claim under the contract was £390, together with £99 9s. 3d. for extras. The defendant had paid £365 on account, leaving the balance sued for. The defendant repudiated liability, and counterclaimed for £88 15s. His contention was that, whereas the contract provided that the work should be carried out to his satisfaction or the satisfaction of his architect, and that it should be finished within three weeks of the date of the contract, it had not been satisfactorily carried out or completed within the specified time. He alleged that the work had been improperly and negligently carried out, so that the greater part of it was of no use, with the result that an outlay of £106 was necessary to put it right. That sum was the basis of his counterclaim, but he credited plaintiffs with £17 5s. for certain extra work which they had done. The defaults of which the defendant complained were that the roof of the main building had not been made sound and water-tight, that the tiling was defective, that the roof itself was flat instead of being of the pitch shown on the plan, and that it was covered with a kind of felt called "ruberoid" instead of slate. He also complained that no adequate means had been provided for carrying off the water, and that for the purpose of the bearing of the roof the boundary wall of an adjoining owner had been made use of.

The plaintiffs, while contending that the work generally had been carried out according to contract, said that the departures from the original plan had been made upon the defendant's instructions.

A great deal of evidence was taken on both sides, the expert witnesses called being Mr. C. R. Evered, architect and surveyor, of Gloucester-terrace, S.W.; Mr. A. E. Williams, surveyor, of Argyle-street, W.; Mr. C. F. Immett, builder, of Herne Hill; and Mr. C. S. Lee, builder, of Southwark Park-road, S.E.

The Official Referee, in giving judgment, said it was clear that the plaintiffs had done part of the work in respect of which they were claiming without any order from the defendant, and for that they could not recover. The defendant had admitted £23 5s. as due, but counterclaimed for the cost of putting the premises in the state in which they should have been left according to the contract. On that claim his judgment was that he was entitled to £50, and, deducting the £23 5s. from that amount, it would leave the defendant entitled to £26 15s. For that amount he gave judgment for the defendant with costs of the claim and counterclaim.

Action for Dilapidations.

Pain v. Williams.—Judgment.

In this action, in which Mr. Verey delivered a reserved judgment, the plaintiff claimed damages for breach of a tenancy agreement dated July, 1910. The claim was for £100 10s., of which £90 10s. was in respect of dilapidations and £10 for loss of rent. The defendant paid £33 9s. 9d. and £6 5s. 3d. into Court, with a denial of liability.

In giving judgment the Official Referee said that the rent of the house in question, which was situated in Upper Clapton, was £80 a year, and the defendant by his agreement undertook to keep and deliver up the premises in good tenantable repair. He gave up possession in July, 1917, and then arose the question as to the amount of repairs and redecoration for which he was liable under the covenant. That he was liable for some repairs he had admitted by his payments into Court, but said that he was not called upon to thoroughly redecorate the house, as the plaintiff required him to do. The house was a new one when the defendant took it, having been built in 1910, and the defendant had, during the tenancy, done repairs and made certain improvements at his own expense. After he had given notice of his intention to terminate his tenancy he was informed that the incoming tenant wanted the house repainted and decorated throughout. Defendant, however, said that it was in good tenantable repair and declined to accept responsibility for the work required by the landlord to be done. Expert evidence had been given on both sides as to the condition of the premises, by Mr. Hood and Mr. Paine for the plaintiff, and by Mr. Simes, a surveyor of 35 years' standing, for the defendant. He had given the evidence careful consideration and came to the conclusion that the plaintiff had failed to prove his claim and that he was not entitled to recover more than the £33 odd paid into Court in respect of dilapidations. As to the claim for the loss of rent, the amount paid into Court was sufficient to cover that. On the whole, he found that the amount paid into Court was sufficient and there would therefore be judgment for the defendant, with costs.

CARPENTERS' HALL LECTURES.

THE HOUSE AS A HOME.*

In the same strain a good deal might be said about the hall. Every part of a house reflects and depends on the social standing of those who use it, and especially is this the case in the hall. In the big country house where the Hunt may meet for lunch, or a tenants' supper may sometimes be held, where large parties of guests are common in everyday life, a big hall that is not a passage-way is a valuable addition to the convenience of a house. Mr. Norman Shaw had much to do with reinstating it in its due place and no one has understood better than he how to set it in the plan of the house, how to give it worthy treatment in the exterior, how to handle it as a fine interior and how to combine it with the rest of the house for convenience of work and service and for noble grouping of the whole design of the house seen from the outside.

In this house, in Shropshire, the hall is a great plan 54 ft. by 32 ft., spanned by three big stone arches carrying the roof, after the fashion of the old Hall at Mayfield. The end of it is screened off by an oak screen two stories high and forming a corridor from the entrance hall to a vestibule from which the drawing-room, library and dining-room are entered. From the great hall both the drawing-room and billiard room can be entered, but there are other entrances to both of them. The staircase goes off from the corridor behind the screen and gets its light from a central courtyard, which also lights the back stair. All the offices are arranged in a wing next to the dining-room corner of the main block and the whole plan is one of the finest arrangements of a big country house that could be conceived, and the exterior is equally fine. It is one of the latest of the large houses built in the revived Gothic manner and probably the best of them all. I could not give you the plan of the house without a great deal of trouble, but here is a plan of Pierrepont, another of Mr. Shaw's large houses, which is very much like the other in the essential arrangement of it.

In the house of modest size the hall is simply a passage way to the various sitting rooms, and wants to be large enough for ease and convenience, for holding the proper furniture without crowding, for giving space enough for people to move about when guests are being entertained, and generally for facilitating the comfortable use of the house; but I have an uneasy feeling that in many middle-class houses the hall—the sitting hall, as it is called—is good room wasted. It is neither one thing nor the other. It is too much of a passage-way for real comfort, and it is simply not required for the purposes of the hall of the great country house; in fact, it is rather an affectation; and probably the better way is to accept the fact of the necessary passage-way and form it as a really good and dignified corridor, wide and ample, and to put the rest of the space into a definite room such as a library or morning room or school room. Still, the hall is a modern development or re-discovery that may be of great value as a contribution to the comforts of a house, if it is planned with care and with due regard to the manner of life of the family.

And another of these modern developments or rediscoveries is the loggia. It is a common enough feature in our old Elizabethan and Jacobean mansions; generally a rather long and relatively shallow place, well to look at, but not of much real use, and probably having some connection with similar things on the Continent that were important accessories to fine gardens, and of adequate size to form museums for sculpture. The modern loggia in a country house of moderate pretensions is one of the most useful and delightful accessories both to the house and to the garden. It is a connecting link between them and almost as useful on a summer day as the drawing-room on a winter evening. Too much care cannot be used in arranging it. It should be sunny, but not uncomfortably hot; easy of approach,

* The second half of a paper by Mr. Arthur Keen, read at Carpenters' Hall on March 13 last.

but not so as to allow much garden gravel to be trodden into the house; and further, it must be so placed that breakfast or tea, and even lunch or dinner, can be served in it without difficulty. It must be deep enough to give room for a table, but if windows look into it, care must be taken that there is adequate light from elsewhere, or the windows will not be of much value in winter time. Further, it should be borne in mind that there is an ever-increasing tendency for people to take their beds into the open air in the summer, and, therefore, a flat roof to the loggia is often a most useful balcony, big enough to meet this eminently desirable development. In this house, by Mr. Walter Cave, the arrangement of the loggia is excellent and well considered from all these points of view. And in other respects, too, the house has very good points, as a closely-planned, well-roofed house, and one in which the appearance is dependent on the composition of parts rather than elaboration of detail. And, after all, this is the only really sound basis for the external design of a house. If the proportions and grouping are right, nothing else matters very much, but if the house fails in this respect, no amount of detail or ornament will redeem it or make it acceptable. There is evidence on every hand that this is being more and more realised by architects. One can tell at a glance at a plan such as this that the building must compose well; it could hardly be spoilt by any handling of the elevations, however clumsy, because the lines and masses are well opposed, the roofing simple and natural; there is obviously plenty of light and shade, and every opportunity for effective grouping. This view of the exterior shows that it is actually so, and, indeed, the house is a very perfect one in every aspect of it. It has what is so absolutely desirable—the feeling of being in agreement with its surroundings; quiet and broad in its treatment, and with nothing aggressive or ill-mannered about it. It is the old question of fitness. A building that is beautiful in a fine city may be an impertinence in a country town; a house that is almost like a natural part of the landscape in Cornwall might be a mere disfigurement in Surrey. There is no quality in architecture so essential as this sense of fitness; no factor in domestic architecture that can so ill be spared, and, perhaps, none that so marks the distinction between old work and modern. In particular, it affects the question of material. Departures from the use of local material are always likely to bring a feeling of vulgarity into the work, and, as a rule, the old methods of use and treatment of the material are right, and should not be much varied, subject, of course, to reason and good sense. I say this because one sees, at the present time, cases where buildings are treated so exactly in the methods of old work that they are simply forgeries, and I feel that this error is to be deprecated like the opposite one of modern vulgarity.

A house by Mr. Guy Dawber, "Heath Lodge," Headley, shows very well indeed how, in my view, domestic architecture should be handled to keep it in harmony with its surroundings, and to rely on the essential masses of the house for its effect by careful study of the proportions and planning of them. The work is simplicity itself. Plain brickwork and chimneys, natural easy roofing, weather-boarded bays, everyday sash windows; it gives almost the impression that the bricklayer and carpenter with the ground plan before them had carried it out in the most straightforward and workmanlike manner that they knew. And yet nothing more is wanted. It would please anybody by sheer force of breadth, and proportion.

In speaking of length as a valuable factor in the appearance of houses of moderate size I might have referred to the L-shaped house as a development of the same idea. The L plan is often most useful in dealing with narrow plots of land, and often very economical in arrangement as regards passages and approaches. It has the advantages of the long house in keeping roofs and chimneys low, and in giving interesting grouping of the exterior and good lighting to the interior, and it enables us to make the most of an unfavourable site. It would often be best in most respects to build a house end-on to the road, but we cannot do it because the front of it would face the flank wall of our neighbour's house; but by using the L plan we go half way and the main windows look down the garden, while pantries and bath rooms, which do not matter, have their outlook on to bricks and mortar. In fact, in the real suburban house, on a frontage of 40 or 50 ft., this plan is often the only one that is of much use, and even in country houses of some size it is useful. The protection given by the long projecting arm is not to be despised, and the plan gives easy access from the road to the kitchen of the house.

I always feel that, for a suburban house, the one that Mr. Voysey built at the corner of Platts-lane, Hampstead, shows a very sound decision as to the best way to act. It was an impossible kind of site—a small corner where two roads meet, and with no proper room for a garden in the ordinary sense. But a good-sized house has been put on it by planning in the L form, and pushing the house back as near to both boundaries as the Building Act would allow, and leaving quite a respectable share of garden ground in the angle in front. A sunny, spacious, comfortable house, and a good example of a difficulty fairly met and rightly solved. I am sorry not to be able to illustrate as I intended a case of conserving the ground of a somewhat narrow site so as to give as much as possible to the garden. It is a plan by Mr. Morley Horder, in which house, stables, and lodge are grouped round a central court enclosed on the south side by a garden wall. The front building is an old malt house adapted to form the stable and lodge, and with an entrance archway cut through it. The lay-out is decidedly interesting; the aspect of each part of the buildings is right; the approaches are convenient, and the ground is made to yield the utmost amount of available garden.

It is easy, however, to discuss types of plans, but it is not to much purpose, because every case is conditioned by site and aspect, accommodation, access, cost, and fifty other things, so that each must be dealt with on its own merits just as every picture must differ from all others. The essential thing is for every house to meet its requirements in an interesting way, and to express the personality of its occupants.

Another house by Mr. Voysey, built near Bath, and with inside walls faced with Bath stone instead of plaster and a stone table in the little courtyard, is no doubt a curiosity; but it is personal in a peculiar way to its owner, and is, in any case, a very interesting experiment. A courtyard in the middle of a small house in generally a damp and unattractive place, but in a one-story house like this, it is sunny and bright, and a pleasant sheltered place to sit in.

In a country house there is something very attractive in the arrangement that gives a view from the entrance door right through into the garden. It seems to convey the idea of welcome; and a house that Mr. Ernest Newton built at Wokingham is a very good instance of it. An entrance corridor runs through, with the staircase on one side of it, and the hall on the other and the garden porch beyond. This house is further a good case of a development of the long, low method of planning. The exterior is treated, like Heath Lodge that we looked at just now, with utter simplicity of design and with reliance chiefly on the main grouping and distribution, but it is full of character; indeed, we could hardly find a house that suggested so well the repose and comfort of the country. There is, as a matter of fact, a good deal of quiet unobtrusive diaper work in the walling which gives it texture but does not show much in the photograph. One of the leading differences between old buildings and new ones is that the old ones have what we call texture and the new have not. It is a difficult quality to describe. It arises by the action of time and weather in making surfaces uneven, by the growth of moss and lichen, by infinite variety in the reflection of light that is inseparable from old glass, by the inequality of colour due to growth or deposit or inherent in the original material—all serving to harmonise and soften the colour, to give light and shadow in every surface and to fill the shades with reflected light so as to make them transparent and interesting. It is like the quality that rough paper gives to the colour in a water colour drawing, making it rich and soft by breaking it into myriads of tiny lights and shadows. Our architects have been seeking lately most diligently to impart it to modern work by selection and blending of material and the skilful use of detail; and while I feel myself that in many cases it has gone beyond all reason and become an obsession, and even an affectation, there is no doubt of its value in supplementing design, but not in taking its place. Hand-work, as opposed to machine-work, on building material is most valuable in giving texture, with this reservation—that the hand may and often does become a mere machine. Mechanical perfection is, all too often, the ideal of the workman—straight line, sharp angles, smooth even surface and colour. This perfection is necessary in machinery and optical work and so forth, but it only mars the perfection of a building seen as a whole; and we architects are always longing to find the men who, knowing their job thoroughly, can be trusted to leave the work with the mark on it of hand and tool—the evidence that it has been done with intelligence and pleasure, whether the material is stone, metal or plaster. It is a difficult point to bring out and I believe much could be done by workmen studying the craftsmanship of old work as architects study the forms and design of it; but something towards it may be done by workshop training, and I am glad to know that this aspect of work is not lost sight of in the School of Building carried on by this Company with such success.

I have little more to say; but this house built by Mr. Edgar Wood on the chalk hills at Royston may be interesting to you as a case in which the orthodox steep roof does not appear. The flat roof was formed to meet the difficulty of water supply caused by the chalk, and to enable the rain water to be collected clean. In such districts as this, the rain water has to be stored for a long while in great underground tanks, and a roof that can be well washed before the winter comes on is very desirable. But I am confident that flat roofs to houses will become far more common n future than at present they are; concrete and asphalt have made them a very practical proposition, and the possibilities of roof gardens are not to be despised. In some situations they might be quite a success, provided, of course, that chimneys and ventilating pipes were carried up to a good height above the roofs. But whether or not the roof is gardened, flat roofs in towns will become common, and any design that tends towards the successful treatment of buildings without visible roofs is worth attention.

I think we may claim to have attained to methods of design in house-building that are sound and serious but elastic enough to meet all requirements in a very reasonable spirit. Symmetry is a very great factor in architectural design, but the builders of the great eighteenth century mansions made themselves slaves to it and their houses with huge central blocks and widespread balanced wings are monuments of failure to meet essential conditions. To-day we depend materially on symmetry, but we realise that it is not inconsistent with a due measure of irregularity, and, indeed, that its value may be enhanced by contrast. I show just one more house that may illustrate this successfully—Mr. Guy Dawber's Tuesley Court—in which, as you see by the plan, the main block is severely balanced in itself, but the kitchen parts, which cannot properly be combined with the rest, are separated in treatment, but linked to the rest in an interesting grouping.

Treated in this way, houses rest on a very stable basis of design. We have passed from the formalism of eighteenth-century classic through the restless individualism of the Gothic revival, and reached a phase in which scholarly reasonable design is carried out by very simple means adaptable to all requirements; and not the least of its merits is, that, wherever it is used, it gives the house the character of the home.

FUEL ECONOMY IN COOKING APPARATUS.*

LECTURE II.

Gas Apparatus and Electricity.

In this connection, however, one important practical consideration must not be lost sight of. It would not be possible for any company to hire out to the general public apparatus of whatever kind which involved continual inspection or maintenance on the part of the company's workmen. If a gas company were to provide a finely-designed appliance for securing economy, it would almost of necessity be continually getting out of order, involving a visit from the gas man, and in consequence expense to the company. The company is, therefore, precluded by economical considerations from supplying any fitting which would involve them in expense for maintenance. Something of the simplest possible character can alone be hired out to the general public. This is probably one of the causes why gas cookers are so inefficient; because they must be simple, durable and inexpensive.

The process of applying electrical energy for the same purpose is much more easy and manageable, essentially because it can be used in small quantities, and because it is not necessary to provide air for combustion. This is the essential feature which must in time bring electrical cooking into much more common use than it is at present—so soon as the electrical companies see the folly of charging five times as much for the current as it ought to cost. All that is necessary is to provide a relatively cheap power supply, and with reasonably careful use the appliances for electrical cooking are, in my judgment, certain to displace all other kinds of cooking. But this will never happen until the electrical companies adopt a more reasonable tariff than they have done hitherto, and until the manufacturers devise more fool-proof appliances than have been used up to date.

The electrical elements can easily be fixed in a completely closed space, and the escape of heat s then only a matter of guarding against easy

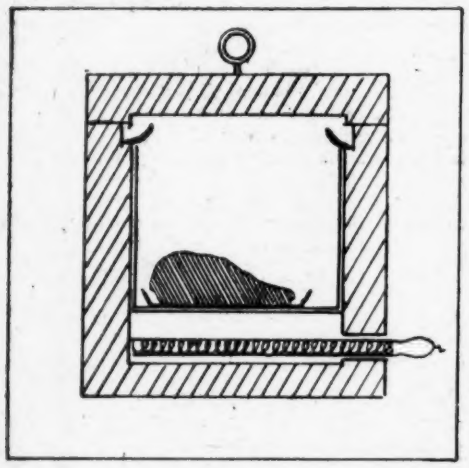

FIG. 7.

transmission by all the well-known devices to which allusion has been made.

As an example, I show a slide showing the extreme simplicity which is possible with electrical cooking. Here we can introduce a heating element into an enclosed space which may be as heat-resisting as we please, and all the heat is generated within that space and nothing need be allowed to escape except by conduction, which may be reduced indefinitely by a careful application of known methods, The difficulties are purely practical in character. The elements must be properly proportioned, of a suitable character, and manageable by a person of inferior intelligence, and have a degree of durability and freedom from danger and expense which electrical appliances commonly lack. Indeed, the great danger involved in electrical cooking is their simplicity and the ease with which high temperatures can be raised, and the power wasted. It is just as if we put a high-powered motor car into the hands of a child, with petrol at £5 a gallon.

Automatic Control and Electrical Cooking.

Electrical cooking could, no doubt, be made reasonably fool-proof by the provision of automatic devices such as could always be relied on to work properly, and provided, also, that the fittings and connections were reasonably fool-proof.

But I have had considerable experience, extending over many years, with automatic devices of one kind and another, and I must confess that I am not in love with them except as an exercise for the brains of the ingenious. If, as usual, they are put into the hands of persons of inferior intelligence they are by far worse than nothing at all. When they are misused, as they generally are, they cause waste where they are specially devised for economy, and they get out of order when they are specially designed to keep other things in order. People naturally come to rely on them when they are working well, and when they go wrong, as they often do, they may do a lot of damage, and the persons in charge of them are unaware of what is wrong.

The only kind of automatic device which can claim unreserved approval is something simple like an electrical fuse properly designed, which automatically stops the proceedings altogether when anything goes seriously wrong, and which is locked up so that an unauthorised person cannot get at it.

The essential difficulty is that the power itself is so expensive that a huge waste occurs every time the oven has to be heated up from cold, and every time the oven door is opened. Electrical energy is made by the companies too expensive to keep the heat on all the time, or even a second longer than is necessary. Now it is a great nuisance and anxiety to anybody engaged in such work as this to be thinking all the time whether she is wasting too much electricity. It is no pleasure to drive a motor car if one is calculating all the time how much each patch of stones costs in tyres, and how much petrol is used every mile one runs. Nothing is worth while, not even an automatic regulator, if it adds to the anxieties of life. Even though, by careful management it were possible to make the cost of electrical cooking cheaper than any other method, which is by no means the case at present, yet the high hourly cost of the power and the absolute necessity not to waste any is a nuisance. One must be allowed a little latitude. It is not possible with electrical power to turn it down as one can a gas burner without external resistances which themselves waste a part of the heat. The plain fact is that as electrical cooking counts now it is only a toy for the rich, whereas it ought to be the only power used by the poor.

Fuel destroyed in Cooking Operations.

It will be remembered that in the last lecture Table II. was shown on the screen exhibiting the amount of coal destroyed for every 1,000 heat units gross delivered into the kitchen. I show this slide again, to refresh the memory. I shall now show a corresponding table which exhibits the amount of coal destroyed for every 1,000 heat units actually *communicated to the food.*

Table III.

Destruction of Coal in delivering 1,000 B.T.U. net to the food in an oven.

Kind of Fuel.	Approx. Efficiency of Oven as used.	Destruction of Coal. lbs.	Remarks.
Coal	.. 3%	2.37	No other products
Gas	.. 11%	4.48	Valuable by-products obtained
Electricity	21%	1.74	No other products

In preparing this table I have taken the average efficiency of the oven as given by certain experiments of my own, made on the general lines described in the last lecture, taken from apparatus as usually used. These experiments show an efficiency for the gas oven of about 11 per cent. for the electrical oven about 21 per cent., and for the coal oven about 3 per cent. I do not give these figures as in any way final. It was pointed out in the first lecture that the efficiency of any such device must vary greatly according to the way it is used. These, therefore, must be taken to be illustrative of the ordinary practice. They show, as will be seen, that in electrical cooking a great deal less fuel is destroyed than in either gas or solid fuel cookery, because the relatively high efficiency of the electrical appliances in the kitchen compared with the other methods more than compensate for the extremely low efficiency with which the electrical power is produced from the coal. It would therefore appear at first sight that, in the national interest, so far as the destruction of fuel alone is concerned, electrical cooking is to be preferred, but it must not be forgotten, and this is a very important point, that with gas cooking the gas may be regarded as a by-product of the destructive distillation of coal, and that the production of large quantities of extremely valuable products, such as coke, tar, ammonia and other things, is a necessary accompaniment to cooking by gas. It is on the value of such products that a final decision on this point can be taken. It is not only possible, but extremely probable, that at the present time, considered purely in the national interest, gas cooking, especially if it were made as economical as it might be, is of considerably greater value than electrical cooking because cooking by gas uses up what may be regarded as a by-product, whereas cooking by electricity certainly involves the total destruction of the coal as well as any possible by-products there may be in it. It might be that where electrical power can be produced solely by the use of coke, or of coal which cannot be otherwise used, this condition might be reversed; no definite pronouncement can be made on any such point until the work of the National Fuel Economy Committee has been completed. Further, only provisional conclusions ought to be drawn from such isolated and inconclusive tests as I have myself been able to make. The whole question of efficiency of each kind of cooking should be exhaustively investigated before any such final conclusion can be arrived at. These figures, therefore are only quoted as illustrative of final figures to be obtained later by exhaustive research, in which both the cooking interest and the engineering interest should be equally concerned.

Apparent Efficiency of Electrical Ovens.

Table IV.

Lachie's Experiments on Electric Cooking.

No. of Oven.	Material Cooked.	Time. H. M.	Cons. Units.	Apparent Approx. Effiy. %
A.	8.5 lb. meat, potatoes, and pudding ..	2 35	7.00	16.3
A.	8.5 lb. meat only ..	2 0	5.7	11.0
A.	12 7-oz. steaks ..	2 14	1.0	38.0
B.	4 7-oz. steaks ..	2 49	0.356	35.7
B.	9 lb. beef & potatoes		3.30	30.0
C.	9.7 lb. beef, potatoes and 5 lb. custard	1 45	3.00	31.6
D.	8.75 lb. meat and potatoes	1 50	4.60	19.0
D.	9.4 lb. meat only ..	1 46	4.20	16.4
E.	9.25 lb. meat ..	1 43	4.25	16.0
F.	9 lb. meat	2 0	4.7	14.0
G.	9 lb. meat	2 41	7.8	8.5
H.	8 lb. meat	3 0	5.9	10

I give above a résumé of certain experiments in cooking by electricity, from which will be seen what a great variation is found not only between different stoves but also between the same stove when differently loaded. This table emphasises and illustrates the remark made in the first lecture when discussing efficiency—that no self-consistent figures of efficiency can be obtained experimentally without a hard and fast artificial rule as to the loading of the oven with artificial materials of definite physical properties instead of actual foods.

(To be continued.)

* Third instalment of the second of a course of lectures delivered at the University College, Gower-street, by Mr. A. H. Barker, B.A., B.Sc., on January 23, and subsequently. Instalments of the first lecture were given in our issues for March 15, 22, 29 and April 5.

THE BUILDING TRADE.

BUILDING PLANS AND FUTURE CONTROL.

It is a long time since any substantial increase has been shown in the cost of buildings for which plans have been submitted to the local authorities, but the return for this first quarter of the year published in the *Labour Gazette* shows a substantial improvement over the same period in last year.

The estimated cost of all buildings embraced in the return was £2,396,729, as compared with £1,674,559, and the increase has taken place in every class of building except dwelling-houses, the greatest increase being in "shops and other business premises," viz., 34.1 per cent. Dwelling-houses show a decrease of 74.6 per cent.

One observation, however, will occur to anyone in connection with these returns, that as they represent the estimated cost of the buildings, they do not necessarily point to an increase in the number of buildings. The net increase in the cost of buildings of which plans were submitted is 43.1 per cent., but a very large proportion of this percentage, if not the whole, would be represented by the increased cost of building operations which have taken place in the year on which the comparison is based.

We believe that in some quarters there is a decided tendency to over-estimate the extent to which the machinery of the building world may be dislocated by the demands made upon it when peace comes. It is true there will be much work which must go on; it is equally true that high prices, taxation, and possible labour difficulties will all tend in the direction of making those whose building projects can be delayed or even abandoned think twice before building. In all the calculations which are so industriously made there is a tendency to exaggerate the plus and overlook the minus in these calculations. It is for these, among other reasons, that we doubt whether the machinery of rationing of materials and control of building will ever be necessary. We know that confusion and chaos are bad things, but we also know by experience the evils of unnecessary control in so complex and many-sided a matter as building. In any case, the question is not comparable in its importance with the prosecution of the war, and we can afford to "wait and see." Unfortunately, we have had to apply these historic words to infinitely more urgent national questions. We say let those who wish to obtain increased powers show that they can efficiently carry out the powers they possess simply to deal with the vital issue of the war.

THE LONDON COUNTY COUNCIL.

At the last meeting of the London County Council the following matters were dealt with:—

The Council's Library.—The Local Government Committee have made certain additions to the Council's Library, including "A Short History of the Curriers' Company"; "Annals of the Company of Joiners"; and Volume I of "The Cutlers' Company," presented by the respective Companies.

Buildings, &c., over Sewers.—Licences have been granted for the erection of buildings, &c., over the Council's sewers as follows:—Northern Outfall Sewer: Construction of splinter-proof shelter at rear of 127, Corporation-street, Stratford. Ranelagh Sewer: Use of ground over sewer adjoining the school at 35, Cliveden-place, Eaton-square, as a drill ground for boys in the school.

Local Sewers.—Sanction has been given for the construction or reconstruction of local sewers as follows: Lambeth—607 ft. of 12 in. sewer in Woodcote-place, West Norwood; Poplar—34 ft. of 12 in. sewer in West India Dock-road by Pennyfields.

PROPOSED NEW BUILDINGS AND OTHER WORKS.*

In these lists care is taken to ensure the accuracy of the information given, but it may occasionally happen that, owing to building owners taking the responsibility of commencing work before plans are finally approved by the local authorities, "proposed" works, at the time of publication, have been actually commenced. Abbreviations:—T.C. for Town Council; U.D.C. for Urban District Council; R.D.C. for Rural District Council; E.C. for Education Committee; L.G.B. for Local Government Board; B.G. for Board of Guardians; L.C.C. for London County Council; B.C. for Borough Council; and P.C. for Parish Council.

BOLTON.—The Education Committee has decided that fourteen schools shall be painted during the summer holidays. Plans passed:—Wash-house, 194, Rishton-lane, for Mr. W. Darby; conversion of two houses into three, East Bank, for Messrs. J. C. and F. Woods; office, 85, Bradshawgate, for Messrs. W. and W. Johnson; telephone box, Crown-street, for Messrs. H. Whitehurst & Sons; rebuilding premises, 83–85, Crook-street, for Mr. H. Whewell; additional bay to extract factory, Nelson-street, for Messrs. William Walker & Sons, Ltd.; additions to dust flues, Morsfield Mills, for Messrs. Knowles, Ltd.; sanitary accommodation, Adelaide-street, for Messrs. Tootal, Broadhurst, Lee & Co.

DURHAM.—The Corporation proposes to improve the main road opposite St. Oswald's Church by removing the wall in front of the church, setting back the fence and widening the road, at a cost of £665.

HULL.—The L.G.B. has given permission to the T.C. to borrow £1,500 for the provision of a refuse-crushing plant. The City Engineer has been asked to place before the Housing Sub-Committee particulars of any areas in the possession of the Corporation which might be suitable for housing schemes. Plans passed by T.C.:—Mr. W. Brant, shed, 55, Scott-street; Messrs. Alf. Spring & Co., Ltd., extensions, West Dock-street; Messrs. Geo. Reed, Ltd., extensions, Southcoates-avenue; National Radiator Co., Ltd., extensions, Perth-street; Mr. R. M. Petty, lavatory, &c., Russia Chambers, Humber-street; Messrs. J. A. Scott, Ltd., warehouse, High-street; British Farina Mills, extensions, Lion Mill, Wincolmlee; Messrs. Reckitt & Sons, Ltd., chimney, Morley-street; Messrs. Rose, Downs & Thompson, Ltd., lavatory accommodation, Reform-street; Messrs. Raines, Porter & Seddon, laboratory, Wincolmlee; British Oil and Cake Mills, Ltd., store, Great Union-street. Plans are also before the Council for a workshop in Church-street for the Drypool Engineering Co.; and garage at Hestle Common, for Mr. F. Collins; and additions, Hampshire-street, for Mr. J. H. Bielby.

IRLAM.—The Housing Committee of the Lancashire County Council reports that the Ministry of Munitions has decided to build 160 houses in the district.

LUDWORTH.—The Durham County Council proposed applying to the L.G.B. for consent to expend £605 on securing a site for a school.

SHOEBURYNESS.—At a recent meeting of the U.D.C. the surveyor submitted his return for proposed post-war works, viz:—48 dwellings for the working classes, the land to cost £800 and the work £14,400; private street works, £3,600; sewerage, £900 for land £40,900 for works. The clauses were approved.

STEPNEY.—Drainage application passed by B.C.:—For 74, 76 and 78, Charles-street, and 47A, Jassera-street. Messrs. Travers & Sons have purchased land to the east of 35–41, High-street, Worthing, on which they contemplate building a factory.

STRETFORD.—The Lancashire Education Committee has approved of the proposal of the U.D.C. to purchase a site in Talbot-road on which to erect a secondary school, and recommend the County Council to enter into an agreement with the Urban Council, by which the latter may borrow £6,500 to cover the cost of the land and expenditure on street-making, fencing, and drainage.

WEST HAM.—Plans passed by B.C.:—Additions, 76, Selwyn-road, Upton Manor, for Mr. R. C. T. Gordon; store and showroom, Lion Wharf, 26, High-street, Stratford, for Mr. R. C. T. Gordon; rebuilding addition, 30, Victoria-street, Plaistow, for Messrs. Watson & Co.; wheelwright's shop, Becton-rd., Canning Town, for Mr. R. C. T. Gordon; shed, 128, Wellington-road, Forest Gate, for Mr. F. Pike; shed and boiler house, Meredith-street, Plaistow, for Messrs. Murray & Jones; addition to St. Barnabas' temporary church, Westwood-road, Silvertown, for Mr. A. Webb; fire-proof room, Dusmo Co.'s premises, West Ham-lane, Stratford, for Messrs. J. T. Newman & Jacques; carpenter's shop, 29, Junction-street, Canning Town, for Mr. J. R. More Smith; cart shed, 4, Randall-street, Canning Town, for Mr. C. Bird; shop front, 310, Queen's-road, Upton Park, for Mr. H. W. Corby.

WESTON-SUPER-MARE.—The Works and General Purposes Committee recommend that the surveyor be instructed to prepare plans for the erection of houses for the working classes on certain lands belonging to the Council in Uphill Drove-road, Bridge-terrace, and Milton-road.

WHITEHAVEN.—The Whitehaven R.D.C. have intimated that they are prepared to consider the desirability of promoting a joint scheme of town planning at the end of the war, and in the meantime they have authorised their surveyor to prepare the necessary information.

WHITEHAVEN.—At a meeting of the Sanitary and Plans Committee, the surveyor having submitted rough plans of houses proposed to be erected at Moresby and lay-out of the site, it was resolved that these be approved and prepared, with an estimated cost of the scheme, for submission to the L.G.B. at an early date. It was resolved that the Council be recommended to erect 100 houses in the parish of St. John's, the site to be so laid out as to allow a further development if required in the future, and that Mr. J. S. Stout, architect, Whitehaven, be engaged to collaborate with Mr. Boyd in the preparation of the scheme.

* See also our list of Competitions, Contracts, &c., on this page.

Competitions, Contracts, &c.

For some contracts still open, but not included in this List, see previous issues. **Those with an asterisk (*) are advertised in this number.** Contracts, —; Competitions, —; Public Appointments, —; Auction Sales, —. Certain conditions beyond those given in the following information are imposed in some cases, such as that advertisers do not bind themselves to accept the lowest or any tender; that a fair wages clause shall be observed; that no allowance will be made for tenders; and that deposits are returned on receipt of a bona-fide tender unless stated to the contrary.

*** It must be understood that the following paragraphs are printed as news, and not as advertisements; and that, while every endeavour is made to ensure accuracy, we cannot be responsible for errors that *may* occur.

BUILDING AND PAINTING.

MAY 7.—**Portslade-by-Sea.**—ALTERATIONS, &c.—For alterations, &c., at the offices of the Urban District Council. Particulars, &c., of Mr. A. Taylor Allen, Surveyor, Station-road, Portslade-by-Sea.

MAY 9.—**Dewsbury.**—SHED, &C.—For erection of shed and offices at Ravens Ing Mill, Ravensthorpe. Quantities, &c., of Messrs. Kirk, Sons, & Ridgway, Dewsbury.

JUNE 29.—**Trowbridge.**—ADDITIONS, &C.—For alterations, additions, repairs, &c., at Council schools during summer holidays, for the Wilts County Council Education Committee. Specifications, &c., of Mr. J. G. Powell, County Surveyor, Trowbridge.

ROAD, SANITARY, AND WATER WORKS.

NO DATE.—**Withernsea.**—WATER SUPPLY.—For laying wrought-iron water-pipe in South Cliff-road. Particulars of the Surveyor to the Urban District Council, Withernsea, Hull.

Building Trade Workers.

The Minister of Munitions has made an Order exempting workmen employed in the building trade from the provisions of section 3 of the Munitions of War Act, 1917, on the ground that the circumstances of their employment are such that the provisions of the section ought not to apply to them.

Importation of Portland Cement, Argentina.

On March 31, 1917, reports H.M. Minister at Buenos Aires, a decree was issued, under which Portland cement of Uruguayan manufacture is permitted to be imported into Argentina in bags in place of barrels when intended for national public works, and if the brands have been previously approved by the Argentine Ministry of Public Works for use in such works. Previous to this decree, the specifications in cases of calls for tenders for Portland cement for public works stipulated that it must be supplied in barrels. A further decree dated February 1, and published in the *Boletin Official* of February 9, is to the effect that the above-mentioned decree of March 31, 1917, is amplified in the sense that equal permission is conceded to all manufacturers of Portland cement of approved brands to import it into the Argentine packed in bags, provided the cement is intended for national public works, in which the storage, climatic and other conditions of the place where they are being carried out, &c., permits it. This condition must be mentioned in the specifications connected with the calls for tenders.

NEW GOVERNMENT CONTRACTS.

H.M. Office of Works.

Building Works.—Bramley O.W. Stores, Asphalte Work: Ragusa Asphalte Co., Ltd., Bow, E. Bristol and Cardiff (Equipment for Emergency Medical Board) Cubicles: B. Maggs & Co., Bristol. Burton's Court, Chelsea, Ministry of Pensions, Erection of Temporary Building: G. Godson & Sons, Ltd., Kilburn, W. Burton's Court, Chelsea, Ministry of Pensions, Lavatories and Sinks: W. R. Pickup & Co., Ltd., Horwich, Lancs. Burton's Court, Chelsea, Steel: Trussed Concrete Steel Co., Ltd., Westminster, S.W. Chorley Employment Exchange, Adaptation: Baxendale Bros., Chorley. Cradley Heath Employment Exchange, Adaptation: E. Crowder, Birmingham. Craigend, Edinburgh, Erection of a Neurasthenic Hospital: J. Millar & Son, Edinburgh. Greenwich Coal Fuel Research Station, Erection (Building Work): Thomas & Edge, Woolwich. New Science Museum, Adaptation for War Purposes. Asphalte Work: Engert & Rolfe, Ltd., Poplar, E. Leeds, Ordinary Works and Repairs: Wm, Thompson & Son, Leeds. London District, Erection of Sectional Huts: Hill, Richards & Co., London, W. St. Ermin's Hotel, Ministry of Munitions Trench Warfare, Erection of Temporary Buildings on Roof: W. J. Maddison, Canning Town. 10, Smith-square, Admiralty Airship Construction Department, Erection of Temporary Building at Rear: J. E. Whiter, Newington-butts, S.E. War Office, Whitehall, Erection of a new Lavatory Block: Wm. Lacey, Hounslow.

Engineering Services.—Grain Stores Generally, Spare Plant Spares: Spencer & Co., Melksham, Wilts. Plymouth Grain Stores, Extra Grain Handling Apparatus: Spencer & Co., Melksham, Wilts. Regent's Park, Aircraft Stores Depot Office Block Extension, Heating and Hot Water Service: Cannon & Hefford, Peckham, S.E. Regent's Park, Aircraft Stores Depot, Electric Wiring: Samuel Reed & Sons, London, E.C. Regent's Park, Aircraft Stores Depot, Runways: The Vaughan Crane Co., Ltd., Manchester.

IMPORTS OF TIMBER.

Under the Timber Order, 1918, just issued by the Board of Trade, timber dealers must obtain permits in respect of timber grown outside the United Kingdom. The Order will, it is expected, be followed before long by another, regulating not only dealing in timber, but also its use in this country, whether grown outside or inside the United Kingdom. Virtually the entire importation of timber will be effected on account of the Government. The present Order is not designed to interfere with the normal business of firms established in the Dominions or Colonies as timber producers, but is intended to prevent speculative transactions in timber in the countries of origin by or on behalf of persons in the United Kingdom.

Sheffield Houses.

The annual meeting of the Sheffield Federated Health Association was held at the Victoria Lecture Hall on the 26th ult., when a conference took place. Mr. W. Sinclair, the President, said the Association never had a more strenuous but successful and fruitful year. He suggested the provision of open spaces by building outside the city, as against merely extending the city. This would be an aid to health. Ventilation in theatres and picture halls was a matter which had been gone into. Mr. W. S. Purchon, Lecturer on Architecture at Sheffield University, said there were 24,000 houses in Sheffield which would have to go during the next five or ten years. There was already a shortage of some 4,000 houses. In twenty years they were going to have to build 50,000 houses. The sanitary arrangements of a quarter of the houses in Sheffield were shocking.

RATES OF WAGES IN THE BUILDING TRADE.

THE following are the present rates of wages in the Building Trade in the principal towns of England and Wales. It must be understood that, while every endeavour is made to ensure accuracy, we cannot be responsible for errors that *may* occur :—

	Masons.	Bricklayers.	Carpenters, Joiners.	Plasterers.	Slaters.	Plumbers.	Painters.	Masons' Labourers.	Bricklayers' Labourers.	Plasterers' Labourers.
	d.	d.	d.	d.	d.	d.	d.	d.	d.	d.
Aberdare	11	11	11	11	11	10½	10	8	8	8
Accrington	11½	11½	1/-	1/-	1/-	10	9½	8	8	8
Altrincham	1/2	1/2	1/3	1/2	1/-	1/4	1/3	11	11	10
Ashton-under-Lyne	1/3	1/3	1/2½	1/2	1/2	1/4	1/3	10½	10½	11½
Barnsley	1/0½	1/0½	11½	1/-	1/-	1/1	9½	9½	9½	9½
Barrow-in-Furness	1/2½	1/2½	1/2½	1/2½	1/2½	1/2½	1/2	1/-	1/-	1/-
Barry	1/-	1/-	1/-	1/-	—	1/-	11	9	9	9
Bath	11½	11½	11½	11	11	11½	10½	9	9	9
Bedford	11	11	11	11	11	11	9	9	9	9½
Birkenhead	1/2	1/2	1/3	1/2	1/2	1/3	1/2	10½	11½	11½
Birmingham	1/1½	1/1½	1/1½	1/1½	1/1½	1/1½	1/0½	10½	10½	10½
Bishop Auckland	11	11	11	1/2	11	10	8	8	8	8½
Blackburn	1/1	1/1½	1/1½	11	1/0½	1/1½	1/-	8½	9	9
Blackpool	1/-	1/2	1/2	10½	8½	1/-	10½	8	8	8
Bolton	1/2	1/2	1/2	1/2	1/2	1/3	1/3	9	9½	10
Bournemouth	11	11	11	11	11	11	10½	8½	8½	8½
Bradford	1/2½	1/2½	1/2	1/2½	1/2½	1/3	1/1	1/-	1/-	1/-
Bridgwater	10	10	10	10	10	10	8½	7	7	7
Brighton	1/-	1/-	1/-	1/1½	1/-	1/-	10½	9½	9½	9½
Bristol	1/2½	1/2½	1/2½	1/2½	—	1/2½	1/1½	11½	11½	11½
Burnley	1/0½	1/0½	1/0½	1/-	1/-	1/2	1/-	8½	8½	8½
Burton-on-Trent	11	11	11	11	11	11	10½	8½	8½	8½
Bury	1/2	1/2	1/2	1/3	1/1	1/2	1/3	10	10½	10½
Cambridge	11	10½	10½	10½	10½	11	9	7½	7½	7½
Cardiff	1/1½	1/1½	1/1½	1/1½	1/1½	1/2½	1/0½	10½	10½	10½
Chatham	10½	11	11	11	11	11	9½	8	8	8
Chelmsford	8	7½	8½	9	—	7½	6½	5	5	6½
Cheltenham	9½	9½	9½	9½	—	9½	9½	6½*	6½*	6½
Chester	11½	1/-	1/-	1/-	1/-	1/-	11½	7½	8½	8½
Chesterfield	1/-	1/2	1/-	11	10	11	1/-	8-8½	8-8½	8-8½
Colchester	10	10½	10½	11	10	11	8½	7½	7½	7½
Coventry	1/2	1/2	1/2½	1/2	1/2	1/2½	1/1	11½	11½	1/0½
Crewe	10	10	10	10	10	9½	10	7	7	7½
Darlington	1/1	1/1	1/1	1/1	1/2	1/-	1/-	10	10	10
Derby	1/-	1/-	1/-	1/-	1/-	11½	11½	9	9	9½
Doncaster	10½	1/-	1/-	10½	10½	10	9½	9½	9½	9½
Dudley	9½	1/-	1/-	10	10	9½	8½	9	9	9½
Durham	10½	10½	10½	10½	10½	9½	9	7½	7½	7½
East Glam. and Mon. Valleys	10	10	10	10	—	—	9	7	7	7
Exeter	10	10	10	10	10	10	9	8	8	8
Folkestone	1/-	1/-	1/-	1/-	1/-	1/-	10	9	9	9
Gloucester	10½	11	11	10½	10½	11	10	8½	8½	8½
Grantham	9½	10	9½	9½	10	8½	8	8	7½	8
Grays	—	1/-	1/-	—	—	1/-	10½	—	10	10
Grimsby	1/-	1/-	1/-	1/-	1/-	1/-	10	10	10	10
Great Yarmouth	10	10	10	10	10	10	8½	7	7	7
Halifax	1/1½	1/1½	1/1½	1/1½	1/1½	1/2	11	10½	10½	10½
Harrogate	10½	9½	11	9	8	1/-	9½	7½	7½	7½
Hartlepools	1/2	1/2	1/2	1/2	1/2	10½	1/-	11	11	11
Hastings	10	10	10	10	10	10	8½	7	7	7
Hereford	10	10	10	10	10	10	9	7½	7½	7½
Huddersfield	1/2½	1/2½	1/3	1/-	1/-	1/2	11	11½	11½	11½
Hull	1/3	1/3	1/3	1/3	1/3	1/3	1/1½	1/1	1/1	1/1
Ipswich	1/-	1/-	1/-	1/0½	1/-	1/0½	10½	9½	9½	9½
Lancaster	1/-	1/-	1/-	1/-	1/-	1/-	1/-	10	10	10
Leamington Spa	10½	10½	10½	10½	10½	10½	9½	7½	7½	7½
Leeds	1/2½	1/2½	1/2	1/2	1/2	1/3	11½	11½	11½	1/-
Leicester	1/1	1/1	1/1	1/1	1/1½	1/1	11½	10½	10½	11
Lincoln	10½	1/-	10½	10½	10½	10½	10	9½	9½	9½
Liverpool	1/2	1/2	1/2	1/2	1/1½	1/3	1/1½	10½	10½	10½
Llanelly	1/1	1/1	1/1	1/1	1/1	1/3	11½	10½	10½	10½
London	1/3½	1/3½	1/3½	1/3½	—	1/3½	1/0½	11½	11½	11½
Loughborough	10	10	10½	10	10	10	9	8½	8½	9½
Luton	10½	10½	10½	11½	10½	11	9½	8	8½	9
Maidstone	11	11	11	10	10	11	10	8	8	8
Manchester	1/3	1/3	1/3	1/3	1/2	1/4	1/3	11	11½	11½
Mansfield	11	11	10½	11	11	10½	11	8	8	8
Merthyr Tydfil	11	11	11	11	11	11	10	8½	8½	8½
Middlesbrough	1/2	1/2	1/2	1/2	1/2	1/2	1/-	11	11	11
Newcastle-on-Tyne	1/2	1/2	1/2	1/2	1/2	1/1	1/1	11	11	11
Newport, Mon.	11½	11½	11½	11½	11½	1/2	10½	8½	8½	8½
Northampton	1/-	1/-	1/-	1/-	1/-	1/-	11	9½	9½	9½
Norwich	10½	10½	10½	10½	10½	10½	9½	8	8	8
Nottingham	1/2½	1/2½	1/2½	1/2½	1/2½	1/3	1/1½	1/0½	1/0½	1/0½
Oldham	1/2	1/2	1/2	1/2	1/-	1/2	1/3	10½	10½	11
Oxford	11	10½	10½	10½	10½	10½	9½	8	8	8
Plymouth	1/2*	1/2*	1/2*	1/2*	1/2*	1/2*	8½*	8½	8½	8½
Pontypridd	11	11	11	11	11	11	10	8	8	8
Portsmouth	1/-	1/-	1/-	1/-	1/-	11	10	9½	9½	9½
Preston	1/-	1/0½	1/-	1/-	1/-	1/-	1/-	8½	9	9
Reading	10½	10½	10½	11	10½	10½	9	7½*	7½*	7½*
Rochdale	1/2	1/2	1/2	1/1	1/1	1/2	1/3	10½	10½	11
Rochester	10½	11	11	11	11	11	9½	8	8	8
Rugby	1/-	1/-	1/-	1/0½	1/1	1/-	11	9	9	10
St. Albans	10	10	10	10	10	10	9	8	8	8½
St. Helen's	1/2	1/2	1/2	1/2	1/2	1/2	1/1	8	8	8
Scarborough	1/-	1/-	11	1/-	9½	9½	8½	9	9	9
Sheffield	1/2½	1/2½	1/2½	1/2½	1/2½	1/2½	1/1½	11½	11½	11½
Shrewsbury	8½	11½	1/3	9½	—	8½	7	8½	8½	8½
Southampton	1/0½	1/0½	1/0½	1/0½	1/0½	1/0½	11½	9½	9½	9½
Southend-on-Sea	10	10	10	10	P'cework	10	9	8	8	8
Southport	1/2	1/1	1/-	1/-	1/-	1/1	1/1	10	10	10
South Shields	1/2	1/2	1/2	1/2	1/2	1/1*	1/1	11	11	11
Stockport	1/3	1/2½	1/2½	1/-	1/1½	1/2	1/3	10	10	10
Stockton-on-Tees	1/2	1/2	1/2	1/2	1/2	10½	1/-	11	11	11
Stoke-on-Trent	11½	11½	11½	11½	—	10½	10½	8½	8½	8½
Stroud	9½	9½	9½	9½	9½	9½	9	7½	7½	7½
Sunderland	1/2	1/2	1/2	1/2	1/2	1/1½	1/1	11	11	11
Swansea	1/1½	1/1½	1/1½	1/1½	1/1½	1/2	1/1	10½	10½	10½
Taunton	10	10	10	10	10	10	9	7½	7½	7½
Torquay	10	10	10	10	10	10	10	8	8	8
Wakefield	10	1/-	11½	1/-	1/-	1/1	1/-	9½	9½	9½
Walsall	1/1½	1/1½	1/1½	1/1½	1/1½	1/1½	1/-	11½	11½	11½
Warrington	1/3	1/3½	1/3	1/3½	1/3½	1/3	1/2	11	11½	11½
West Bromwich	11	11	10½	10½	—	10	9	8	8	8
Wigan	1/1½	1/2	1/1½	1/0½	1/0½	1/1½	1/3	10½	11	11
Windsor	1/-	1/-	1/-	1/-	1/-	1/-	10½	9	9	9
Wolverhampton	1/-§	1/-§	1/-§	1/-§	1/-§	1/-§	10½§	9§	9§	9½
Worcester	9½	1/-	1/-	1/-	1/-	1/-	10	10½	10½	10½
York	1/-	1/-	1/-	1/-	1/-	10½	9½	9½	9½	9½

The Masons' rate given is for bankers; fixers usually ½d. per hour extra.
* War bonus of 2s. per week granted. †War bonus of 3s. per week granted. ‡War bonus of 3s. 6d. per week granted.
‖ War bonus of 6s. per week granted. § 1½d. per hour extra for men engaged on munition work.

PRICES CURRENT OF MATERIALS.

[Owing to the exceptional circumstances which prevail at the present time, prices of materials should be confirmed by inquiry. Since our last issue several prices have been revised—Ed.]

*** Our aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the highest or lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

BRICKS, &c.

Per 1,000 Alongside, in River Thames.	£ s. d.
Best Stocks	2 10 0
Picked Stocks for Facings	3 5 0

Per 1000, Delivered at Railway Depot, London.

	£ s. d.		£ s. d.
Flettons	2 3 0	Best Blue Pressed Staffordshire	6 10 0
Best Fareham Red	4 0 0	Do. Bullnose	6 15 0
Best Red Pressed Ruabon Facing	6 0 0	Best Stourbridge Fire bricks	9 5 0

GLAZED BRICKS—

	£ s. d.		£ s. d.
Best White, Ivory, and Salt Glazed Stretchers	14 17 6	D'ble Str'tch'rs	20 7 6
		D'ble Headers	17 7 6
Headers	14 7 6	One Side and two Ends	21 7 6
Quoins, Bullnose and 4½in. Flats	18 7 6	Two Sides and one End	22 17 6
		Splays and Squints	19 17 6

Glazed bricks priced at so much each, 25 per cent. advance on list.

Second Quality, £1 per 1,000 less than best.

	s. d.		
Thames Ballast	11 0	per yard,	delivered
Pit Sand	13 0		
Thames Sand	13 6	,, ,,	2 miles
Best Washed Sand	14 0	,, ,,	radius
¾ in. Shingle for Ferro-Concrete	12 0	,, ,,	Paddington.

Per ton, delivered.	£ s. d.		£ s. d.
Best Portland Cement	2 18 0	..	3 1 0

Do. £2 11s. 0d. alongside in 80-ton lots.
Ferrocrete 2s. 6d. per ton extra on above.
Best Ground Blue Lias Lime 1 13 6 at rly. depot.
NOTE.—The cement or lime is exclusive of the ordinary charge for sacks. The sacks are charged at 2s. 3d. each and credited at 2s. each if returned in good condition within three months.
Grey Stone Lime ..... 47s. 0d. per ton delivered.
Stourbridge Fireclay in s'cks 37s. 6d. per ton at rly. dpt.

STONE.

	s. d.
BATH STONE—delivered in railway trucks at Westbourne Park, Paddington, G.W.R., or South Lambeth, G.W.R., per ft. cube	1 7
Do. do. delivered in railway trucks at Nine Elms, L. & S.W.R., per ft. cube	1 8½
Do. do. delivered on road waggons at Nine Elms Depot	1 9½
PORTLAND STONE—	
Brown Whitbed, in random blocks of 20 ft. average, delivered in railway trucks at Nine Elms, L.& S.W.R., South Lambeth Station, G.W.R., and Mileage Station G.W.R., per ft. cube	2 10½
Do. do. delivered on road waggons at above stations, per ft. cube	2 11½

White basebed, 2d. per ft. cube extra.
NOTE.—½d. ft. cube extra for every foot over 20 ft. *average*.

RANDOM BLOCKS—Per Ft. Cube, delivered at Rly. Dpot.

	s. d.		s. d.
Ancaster in blocks	2 0	Closeburn Red	
Beer in blocks	1 7½	Freestone	2 2
Grinshill in blocks	2 4	Red & White Mansfield random block	2 9
Darley Dale in blocks	2 5	Yellow Magnesian Limestone do. do	3 3

YORK STONE—*Robin Hood Quality.*

Delivered at any Goods Station London.	s. d.
Scappled random blocks ..... Per Ft. Cube	3 11
6 in. sawn two sides landings to sizes (under 30 ft. super.) ..... Per Ft. Super	3 0
6 in. rubbed two sides, ditto ..... ,,	3 4
3 in. sawn two sides slabs (random sizes) ,,	1 3½
2 in. to 2½ in. sawn one side slabs (random sizes) ..... ,,	0 10
1½ in. to 2 in. ditto, ditto ..... ,,	0 8½

HARD YORK—

Delivered at any Goods Station London.	s. d.
Scappled random blocks ..... Per Ft. Cube	3 6
6 in. sawn two sides landing to sizes (under 40ft. super.) ..... Per Ft. Super	2 8
6 in. rubbed two sides ditto ..... ,,	2 4
3 in. sawn two sides slabs (random sizes) ,,	1 3
2 in. self-faced random flags ..... ,,	0 5½

TILES.

	Per 1,000 f.o.r. London. £ s. d.
Best machine-made tiles from Broseley or Staffordshire district	3 15 0
Ditto hand-made ditto	3 17 6
Ornamental ditto	4 0 0
Hip and valley tiles (per dozen)	0 9 0

SLATES.

		Per 1,000 of 1,200 f.o.r. London. £ s. d.
Best Blue Bangor Slates,	20 by 10	16 10 0
First quality" "	16 by 8	8 10 0
" "	20 by 10	16 0 0
" "	16 by 8	8 2 6
Best Blue Portmadoc	20 by 10	16 10 0
" "	16 by 8	8 10 0
First quality "	20 by 10	15 5 0
" "	16 by 8	7 12 6

WOOD.

BEST BUILDING REDWOOD. Imported sizes.

Deals: 4 in. by 12 in., 4 in. by 11 in., 3 in. by 11 in., 4 in. by 9 in., and 2 in. by 11 in. ..... 3 in. by 9 in., 2½ in. by 9 in., and 2 in. by 9 in. .....

Softwood stocks controlled by the Director of Materials, consequently prices must be withdrawn

WOOD (*Continued*).

BEST BUILDING REDWOOD.

Battens: 2 in., 2½ in., and 3 in. by 8 in. .....
2 in., 2½ in., and 3 in. by 7 in. .....
2 in., 2½ in., and 3 in. by 6 in. .....
Scantlings: 2 in. by 3 in., 2 in. by 3½ in., 2 in. by 4 in., 2 in. by 4½ in. ... 3 in. by 4 in., and 3 in. by 4½ in. .....
Boards: 1 in., 1¼ in., and 1½ in. by 6 in. and 7 in. ½ in. .....
Seconds .....
Sawn pitch pine logs (about 35 cu. ft. average .....
Do. 6 in. to 10 in. ..

Best Pitch Pine Deals ....
Under 2 in. thick .....

JOINERS' WOOD

White Sea First Quality Red: 4 in. by 11 in...
3 in. by 11 in., and 2 in. by 11 in. .....
4 in. by 9 in. ....
3 in. by 9 in., and 2½ in. by 9 in. .....
3 in. by 11 in. boards ..
7 in. and 8 in. battens ..
7 in. and 8 in. boards ...
Archangel White Deals—
Best 3 in. by 9 in. and 10 in. and 11 in. .....
Seconds, do. .....
U.S. Battens .....
Prepared Floorings and Matchings. Seconds Swedish Red and equal—
1¼ in. by 6½ in. planed and shot .....
1¼ in. by 6½ in. planed and matched .....
1 in. by 6½ in. planed and shot .....
1 in. by 6½ in. planed and matched .....
¾ in. by 6½ in. planed, matched, and beaded, or V jointed .....
1 in. by 6½ in. do. .....
Columbian or Oregon Pine, best quality .....
Yellow Pine—First regular sizes .....
Oddments .....
Seconds, regular sizes ..
Oddments .....
Kauri Pine—Planks per ft. cube.....

Softwood stocks controlled by the Director of Materials, consequently prices must be withdrawn.

Dry Wainscot Oak, per ft. super, as inch	0	2	0	..	0	2 6
¼ in. do. do.	0	1	6	..	0	2 0
Dry Mahogany—Honduras, Tabasco, per ft. super, as inch	0	2	6	..	0	3 0
Cuba, Mahogany	0	2	6	..	0	3 6
Dry Walnut, American, per ft. super, as inch	0	2	0	..	0	3 0
French, "Italian," Walnut	0	3	0	..	0	5 0
Teak, per load (Rangoon or Moulmein)	60	0	0		85	0 0
Do. do. (Java)						
American Whitewood planks, per ft. cube	1	4	0	..	1	10 0
Glue, per cwt.	6	0	0	..	6	15 0

METALS.

JOISTS, GIRDERS, &c.

Rolled Steel Joists, ordinary sections, basis price .....
Plain Compound Girders, ordinary sections .....
Plain Compound Stanchions
Angles, Tees, and Channels, ordinary sections .....
Flitch Plates .....
Cast Iron Columns and Stanchions, plain ordinary patterns .....

Prices controlled by the Ministry of Munitions.

WROUGHT-IRON TUBES AND FITTINGS—
(Discount off List for lot of not less than £4 net value delivered direct from works. 5 per cent. less carriage forward if sent from London stocks.)

	Sizes up to and including 2 in. Tubes.	Fittings.	Sizes 2½ in. to 6 in. Tubes.	Fittings.
Gas	36½	40	41½	42½
Water	31½	37½	36½	40
Steam	26½	35	31½	37½
Galvanised Gas	13½	32½	17½	35
,, Water	5	30	8½	32½
,, Steam	1½ *on*	27	2½	30

L.C.C. SOIL PIPES— London Prices ex works.

	Pipes coated. s. d.	Bends, stock angles. s. d.	Branches, stock angles s. d.
2 in. per yd. in 6 fts.	3 4	2 6	3 0
2½ in. ,,	3 10	2 9	3 9
3 in. ,,	4 9	3 0	4 6
3½ in. ,,	5 3	3 9	5 3
4 in. ,,	5 9	4 3	6 0

RAIN-WATER PIPES, &c.

	Pipe. s. d.	Bends, stock angles. s. d.	Branches, stock angles s. d.
2 in. per yd. in 6fts. plain	2 5	1 6	1 11
2½ in. ,, ,,	2 6½	1 9	2 4
3 in. ,, ,,	3 0	2 1	3 0
3½ in. ,, ,,	3 7	2 5	3 5
4 in. ,, ,,	3 11	2 11	4 2

L.C.C. DRAIN PIPES,—9 ft. lengths. London Prices. 4 in., 7s. 0d. .. 5 in., 8s. 6d. .. 6 in., 10s. 0d.

Per ton in London.	£ s. d.		£ s. d.
IRON—			
Common Bars	16 10 0	to	17 0 0
Staffordshire Crown Bars - good merchant quality	16 10 0	..	17 10 0
Staffordshire "Marked Bars"	18 0 0	..	19 0 0
Mild Steel Bars	21 0 0	..	21 10 0

METALS (*Continued*).

Per ton in London.	£ s. d.		£ s. d.
Steel Bars, Ferro-Concrete quality, basis price	19 10 0	..	20 0 0
Hoop Iron, basis price	20 10 0	..	21 10 0
,, ,, Galvanised	33 0 0	..	—
Sheet Iron Black—			
Ordinary sizes to 20 g.	23 0 0	..	23 10 0
,, ,, 24 g.	24 0 0	..	24 10 0
,, ,, 26 g.	25 0 0	..	26 0 0
Sheet Iron, Galvanised flat, ordinary quality—			
Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 20 g.	34 0 0	..	—
Ordinary sizes to 22 g. and 24 g.	34 0 0	..	34 10 0
Ordinary sizes to 26 g.	36 0 0	..	36 10 0
Sheet Iron, Galvanised, flat, best quality—			
Ordinary sizes to 20 g.	35 10 0	..	—
,, ,, 22 g. and 24 g.	36 0 0	..	—
Ordinary sizes to 26 g.	39 0 0	..	—
Galvanised Corrugated Sheets—			
Ordinary sizes, 6 ft. to 8 ft. 20 g.	33 0 0	..	Nominal prices only.
Ordinary sizes, 22 g. and 24 g.	33 10 0	..	
Ordinary sizes, 26 g.	32 10 0	..	
Best Soft Steel Sheets, 6 ft. by 2 ft. to 3 ft. to 20 g. and thicker	24 10 0	..	—
Best Soft Steel Sheets, 20 g. and 24 g.	24 15 0	..	—
Best Soft Steel Sheets, 26 g.	26 10 0	..	—
Cut Nails, 3 in. to 6 in.	29 0 0	..	30 0 0

(Under 3 in., usual trade extras.)

LEAD, &c.

Delivered in London.	£ s. d.		
LEAD—Sheet, English, 4 lb. and up	38 10 0	..	—
Pipe in coils	39 0 0	..	—
Soil Pipe	42 0 0	..	—
Compo pipe	42 0 0	..	—

NOTE—Country delivery, 20s. per ton extra; lots under 5 cwt., 1s. 6d. per cwt. extra. Cut to sizes, 2s. cwt. extra. Orders for over 1 cwt. Sheet Lead or Pipe, or 28 lbs. Solder should be accompanied by a certificate or licence, which can be obtained from the Director of Materials [A.N.2 (E)], Hotel Victoria, S.W. Smaller quantities than the above can be obtained by making a written declaration to the Manufacturer or Merchant that the metal is wanted for urgent renewals or repairs, and giving the name of the job for which it is required.

		£ s. d.		
COPPER—				
Strong Sheet	per lb.	0 2 3	..	—
Thin ,,	,,	0 2 4	..	—
Copper nails	,,	0 2 3	..	—
Copper wire	,,	0 2 4	..	—
TIN—English Ingots	,,	0 3 3	..	—
SOLDER—Plumbers'	,,	0 1 8	..	—
Tinmen's	,,	0 2 2	..	—
Blowpipe	,,	0 2 4	..	—

GLASS.

ENGLISH SHEET GLASS IN CRATES OF STOCK SIZES AND IN SQUARES IN ORDINARY SIZES.

	Per Ft		Per Ft.
15 oz. fourths	7d	32 oz. fourths	10d.
,, thirds	7½d.	,, thirds	11d.
21 ,, fourths	7½d	Fluted, Obscured and	
,, thirds	8½d.	Enamelled Sheet,	
26 ,, fourths	8½d.	15 oz.	7½d.
,, thirds	9½d.	21 ,,	8½d.

Extra price according to size and substance for squares cut from stock, and only small quantities can be supplied without an A Certificate.

ENGLISH ROLLED PLATE IN CRATES OF STOCK SIZES.

	Per Ft.
¼ Rolled plate	5d.
⅜ Rough rolled and rough cast plate	5½d.
½ Rough rolled and rough cast plate	6d.
Figured Rolled, Oxford Rolled, Baltic, Oceanic, Arctic, Stippolyte, and small and large Flemish white	6½d.
Ditto, tinted	7½d.
Rolled Sheet	5½d.
White Rolled Cathedral	5½d.
Tinted do.	6d.

PAINTS, &c.

	£ s. d.			
Raw Linseed Oil	in pipes	per gallon	0 5 8	
,, ,, ,,	in barrels	,,	0 5 9	
,, ,, ,,	in drums	,,	0 6 0	
Boiled ,, ,,	in barrels	,,	0 6 0	
,, ,, ,,	in drums	,,	0 6 3	

Orders for these oils must be accompanied by a certificate from the Ministry of Food (Oil and Fat Department), St. Stephen's House, Westminster, S.W.1.

Turpentine	in barrels	,,	0 11 3
,,	in drums	,,	0 11 6
Genuine Ground English White Lead, per ton			54 0 0

(In not less than 5 cwt. casks.)

GENUINE WHITE LEAD PAINT—

"Blackfriars," "Nine Elms," "Park," and other best brands (in 14 lb. tins) not less than 5 cwt. lots	per ton delivered	74 10 0
Red Lead, Dry (packages extra)	per ton	42 0 0

Orders for White and Red Lead and any Paint containing Lead must be accompanied by a certificate or licence, which can be obtained from the Director of Materials [A.N. 2 (E.)], Hotel Victoria, S.W.

Best Linseed Oil Putty	per cwt.	0 17 6
Filocol	per cwt.	0 15 0

VARNISHES, &c.

Per gallon.	£ s. d.
Fine Pale Oak	0 12 0
Pale Copal Oak	0 14 0
Superfine Pale Elastic Oak	0 16 0
Fine Extra Hard Church Oak	0 14 0
Superfine Hard-drying Oak, for seats of Churches	0 18 0
Fine Elastic Carriage	0 18 0
Superfine Pale Elastic Carriage	0 18 0
Fine Pale Maple	0 14 0
Finest Pale Durable Copal	1 0 6
Extra Pale French Oil	1 4 0
Eggshell Flatting	1 0 0
White Pale Enamel	1 6 0
Extra Pale Paper	0 16 0
Best Japan Gold Size	0 12 0
Best Black Japan	0 16 0
Oak and Mahogany Stain	0 12 0
Brunswick Black	0 10 0
Berlin Black	0 16 0
Knotting	1 10 0
French and Brush Polish	1 0 0

NEW COMPANIES.

The particulars quoted below have been compiled by Jordan & Sons, Ltd., Company Registration Agents, of 116 and 117, Chancery-lane, W.C. 2, from the documents available at the Companies Registry :—

BITULIN MANUFACTURING CO., LTD. (150,045), 20, Budge-row, E.C. Registered April 3. To carry on the business of manufacturers of, and to sell, deal, and work cement, mastic cement, enamel, &c. Nominal capital £3,700 in 3,500 £1 preference shares and 4,000 1s. founders' shares.

DAIRY CONSTRUCTION AND EQUIPMENT COMPANY, LTD. (150,036), 37, Walbrook, E.C. Registered April 2. To carry on the business of dairy engineers, builders, &c. Nominal capital £5,000 in 5,000 £1 shares, of which 2,500 are preference shares and 2,500 are ordinary shares.

DORSET BRITISH TIMBER, LTD. (150,109). Registered April 10. To carry on the business of a saw mills and timber merchants, &c. Nominal capital £3,000 in 3,000 £1 shares.

END RUNNER MILLS COMPANY, LTD. (150,110). Registered April 10. To carry on the business of manufacturers of mills for grinding purposes and other machinery, iron-founders, mechanical engineers, tool makers, &c. Nominal capital £500 in 500 £1 shares.

J. H. STICKLER & Co. (CARDIFF), LTD. (150,038). Registered April 2. To carry on the business of plumbers, tinsmiths, coppersmiths, general engineers, &c. Nominal capital, £2,000 in 2,000 £1 shares.

JOHN GLASBROOK, SONS & Co., LTD. (150,090). Registered April 8. To carry on the business of saw mill proprietors and timber merchants, &c. Nominal capital £60,000 in 60,000 £1 shares.

ROBERT TEMPLE MANUFACTURING COMPANY, LTD. (150,116). Registered April 10. To carry on business as timber merchants, saw mill proprietors, wood-workers, &c. Nominal capital £15,000 in 15,000 £1 shares.

S. H. BIDGOOD & Co., LTD. (150,130). 22, Wolborough-street, Newton Abbot, Devon. Registered April 11. To carry on the business of builders' merchants and ironmongers, &c. Nominal capital £2,000 in 2,000 £1 shares.

VINCE & VINCE (WEREHAM), LTD. (149,937). Registered March 21. To carry on the trades or businesses of timber, joinery and slate importers, &c. Nominal capital, £10,000 in £1 shares.

W. & D. WILKINS, LTD. (149,995), Southsea-avenue, Watford. Registered March 26. To carry on business as builders and contractors, &c. Nominal capital £12,000 in £1 shares.

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With or without Black, White, or Mahogany Beads

Our Silvering Process is the product of the latest scientific and mechanical inventions. White, brilliant, and extremely durable.

PATENTS.

APPLICATIONS PUBLISHED.*

111,098.—Précision Mécanique: Wedge-operated locking arrangement for slide gauges.

114,163.—C. J. Aberg: Method of road-making and apparatus therefor.

114,181.—W. P. Thompson (P. C. Reilly): Preservation of wood and the production of substances therefor.

114,199.—J. P. B. Fiske: Wall constructions and bricks therefor.

114,202.—H. A. Gill (S. Taylor): Carpenters' squares or rules.

114,216.—L. M. Mayne, R. A. W. Smith and C. Mayne: Detachable drawers.

114,221.—W. J. Stewart and J. Woolcock: Reinforced concrete piles.

114,230.—W. H. A. de Bruyn: Distemper.

114,253.—E. Hirsch: Reinforced floors or roofs.

114,255.—L. A. Pottereau: Construction of ships built of reinforced concrete.

114,279.—H. Gronroos: Mould for casting artificial stone building blocks.

114,319.—E. Vagneux: Understructure for supporting railway tracks.

* All these Applications are now in the stage in which opposition to the grant of Patents upon them may be made.

TRADE NEWS.

It is proposed to cover the floor of the cellar of Tanhouse Farm, Ipsley, with Pudloed concrete in order to obviate flooding. The walls have already been made bone dry with waterproofed cement, but the floor has been left until the dry season, owing to the permanent flow of water.

We understand that Bennett's patent damp-proof and double-keyed system of highest grade Zeta Floor is being laid at Mr. Bernard Oppenheimer's diamond-cutting workshops for disabled soldiers in Lewes-road, Brighton. These workshops were recently visited and inspected by the U.S. Labour Delegates.

J. J. ETRIDGE, Jr.
SLATE MERCHANTS, LTD.
EXPERTS IN
SLATING, TILING.
STRIPPING AND RELAYING.
Telephone: Avenue 4940 (two lines), or write
Bethnal Green Slate Works,
BETHNAL GREEN, LONDON, E.

TENDERS.

Communications for insertion under this heading should be addressed to "The Editor," and must reach us *not later than* 12 *noon on Wednesday.*

* Denotes *accepted.* † Denotes *provisionally accepted.*
‡ Denotes *recommended for acceptance.*

DURHAM.—For supply of gullies and gulley gratings, for the Durham County Council :—

*Geo. Denham & Sons, Darlington—At £2 12s. for grating and frame; 19s. 6d. weir; 24s. grating; 28s. frame.

TURPIN'S
(W. S. ADAMS, Proprietor)
WOOD BLOCK FLOORS
in Oak, Elm, P. Pine, etc.
ASPHALTE BLOCK PAVING
for Workshops, Factories, Roadways, etc.
25, NOTTING HILL GATE, LONDON, W.11
Telephone No.: PARK 1885.
Telegraphic Address: "TURPILIUS, LONDON."

Asphalte.—The Seyssel and Metallic Lava Asphalte Co. (Mr. G. F. Glenn), Office, Moorgate Station Chambers, Moorfields, E.C. 2—The best and cheapest materials for dampcourses, railway arches, warehouse floors, flat roofs, stables, cow-sheds and milk-rooms, granaries, tun-rooms, and terraces. Asphalte Contractors to Forth Bridge Co.

OGILVIE & CO., Telephone: DALSTON 1858. Many years connected with the late firm of W. H. LASCELLES & Co., of Bunhill Row.
Mildmay Works, Mildmay Avenue, Islington, N.
EXPERTS IN HIGH-CLASS JOINERY.
ALTERATIONS AND DECORATIONS. ESTIMATES FREE

THE TREAD OF THE PRESENT & THE FUTURE

PATENT LEAD-CARBO. GROOVELESS
SAFETY TREAD SYNDICATE Ld. Crown Wharf Ironworks, Dace Road, Old Ford, E.3.
[MASON'S PATENT.]

TYE & ANDREWS' NEW PATENT SINK TRAP is universally admitted to be THE ONLY PERFECT TRAP FOR SINKS IN DOMESTIC DWELLINGS, as fixed at the principal Institutions. Among others, Wellington Barracks, Royal College of Surgeons, etc. Prospectus upon application to the Patentees.
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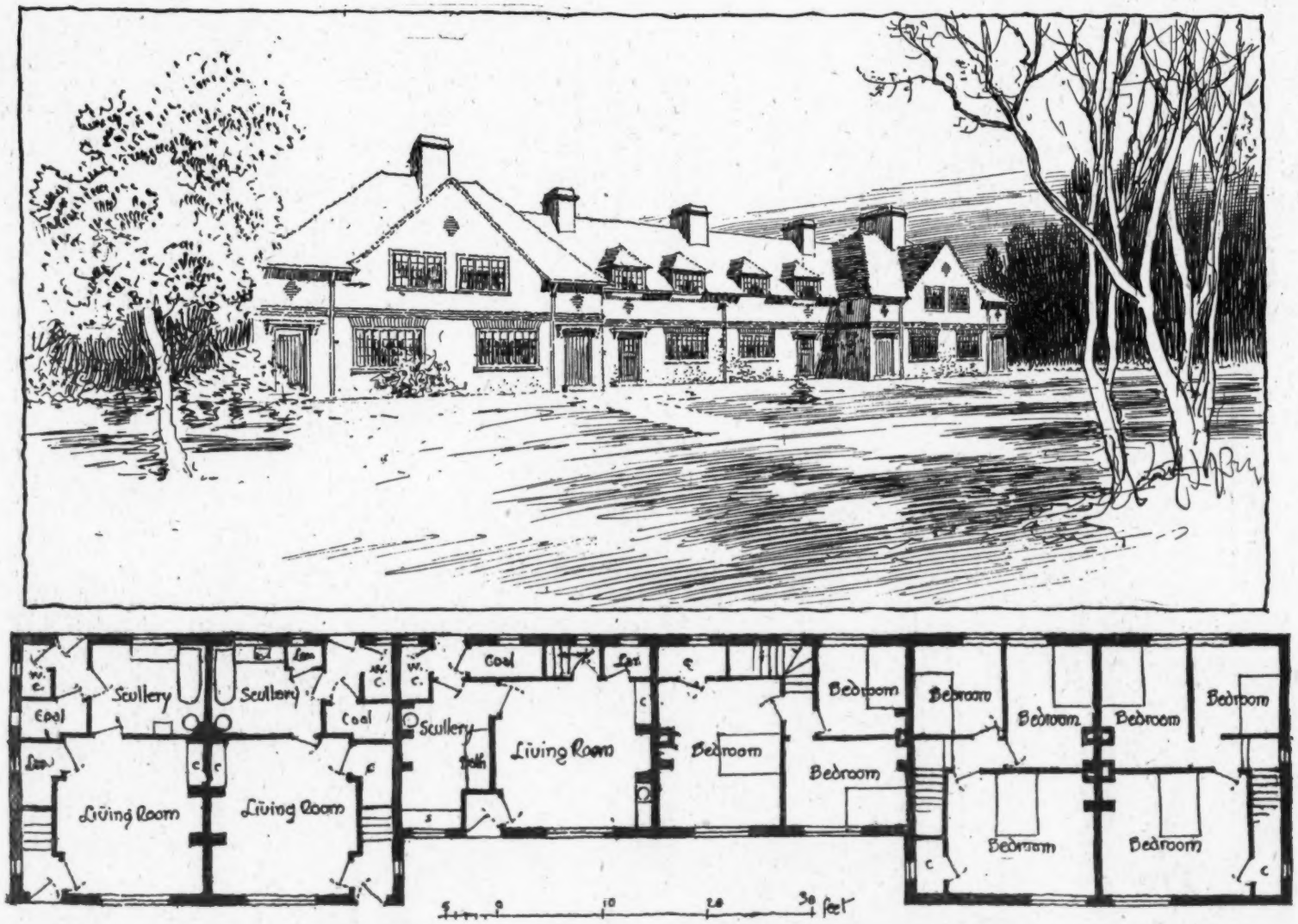
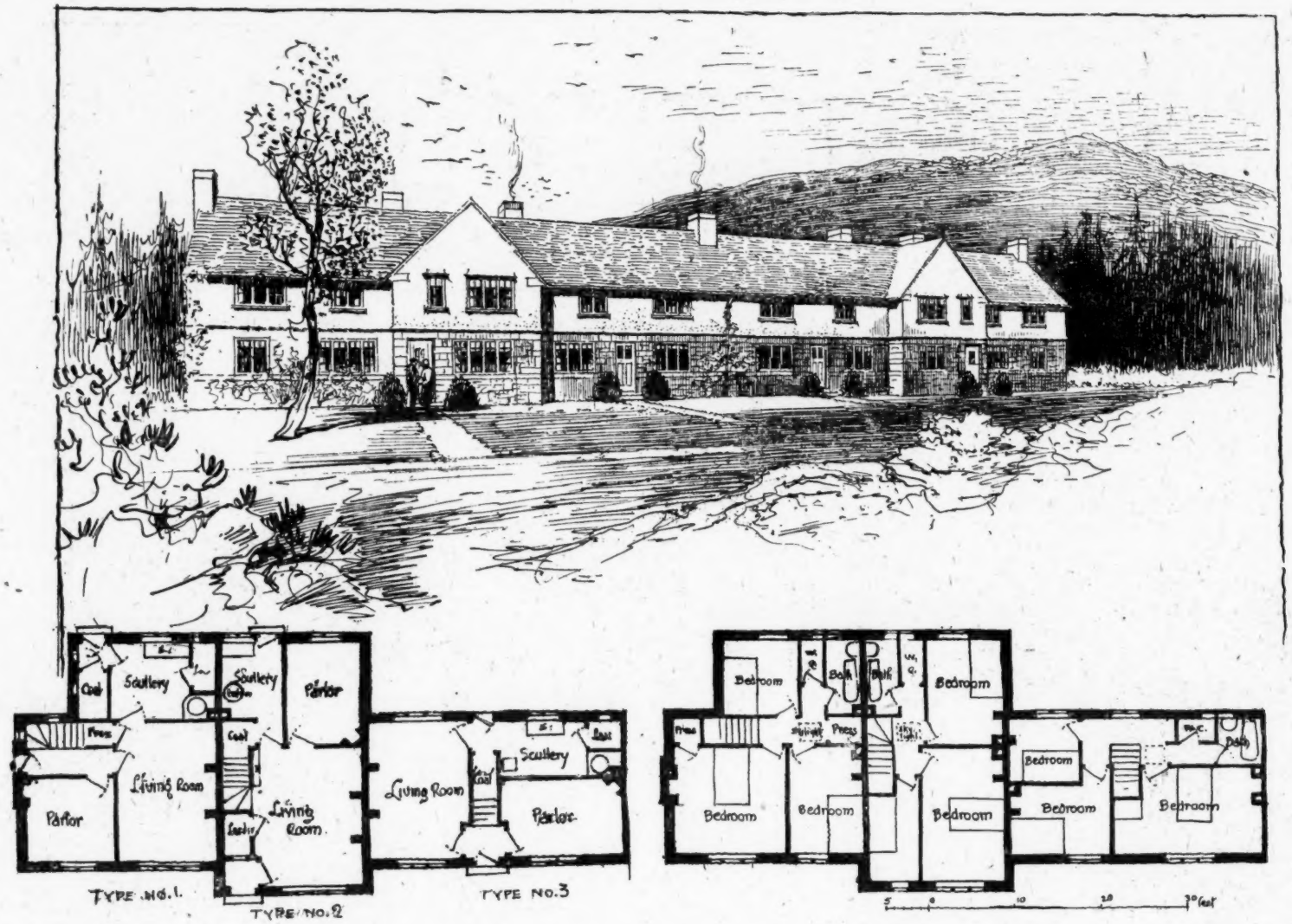


THE L.G.B. AND R.I.B.A. COTTAGE COMPETITION (NORTHERN AREA).

CLASS A.—FIRST PREMIATED DESIGN, BY MR. J. HERVEY RUTHERFORD, LIC. R.I.B.A.



THE L.G.B. AND R.I.B.A. COTTAGE COMPETITION (NORTHERN AREA).

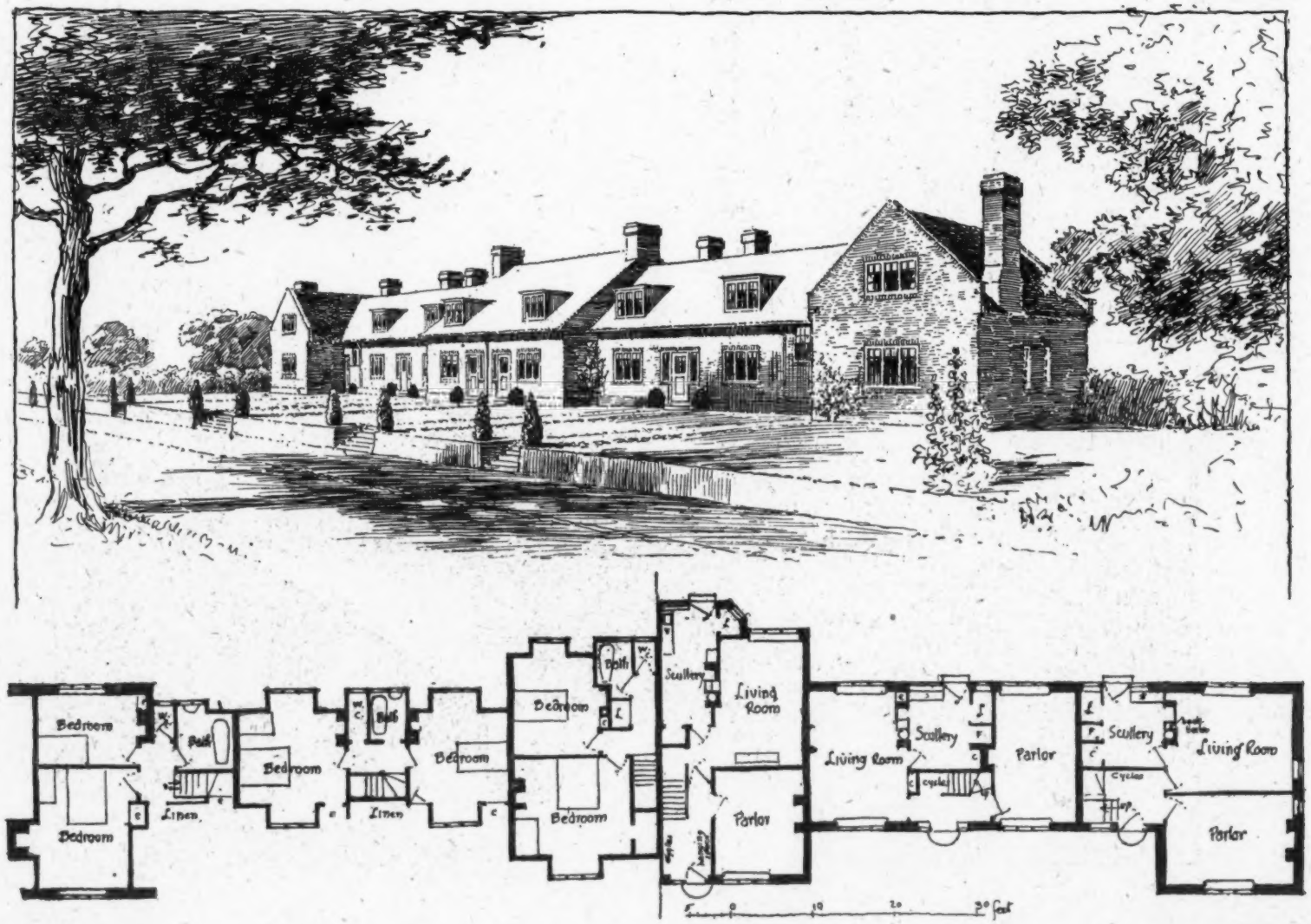
CLASS B.—FIRST PREMIATED DESIGN, BY MR. ALEX. T. SCOTT.

ANTWERP.

FROM A DRAWING BY THE LATE CAPTAIN GASCOYNE.

MALINES.

FROM A DRAWING BY THE LATE CAPTAIN GASCOYNE.



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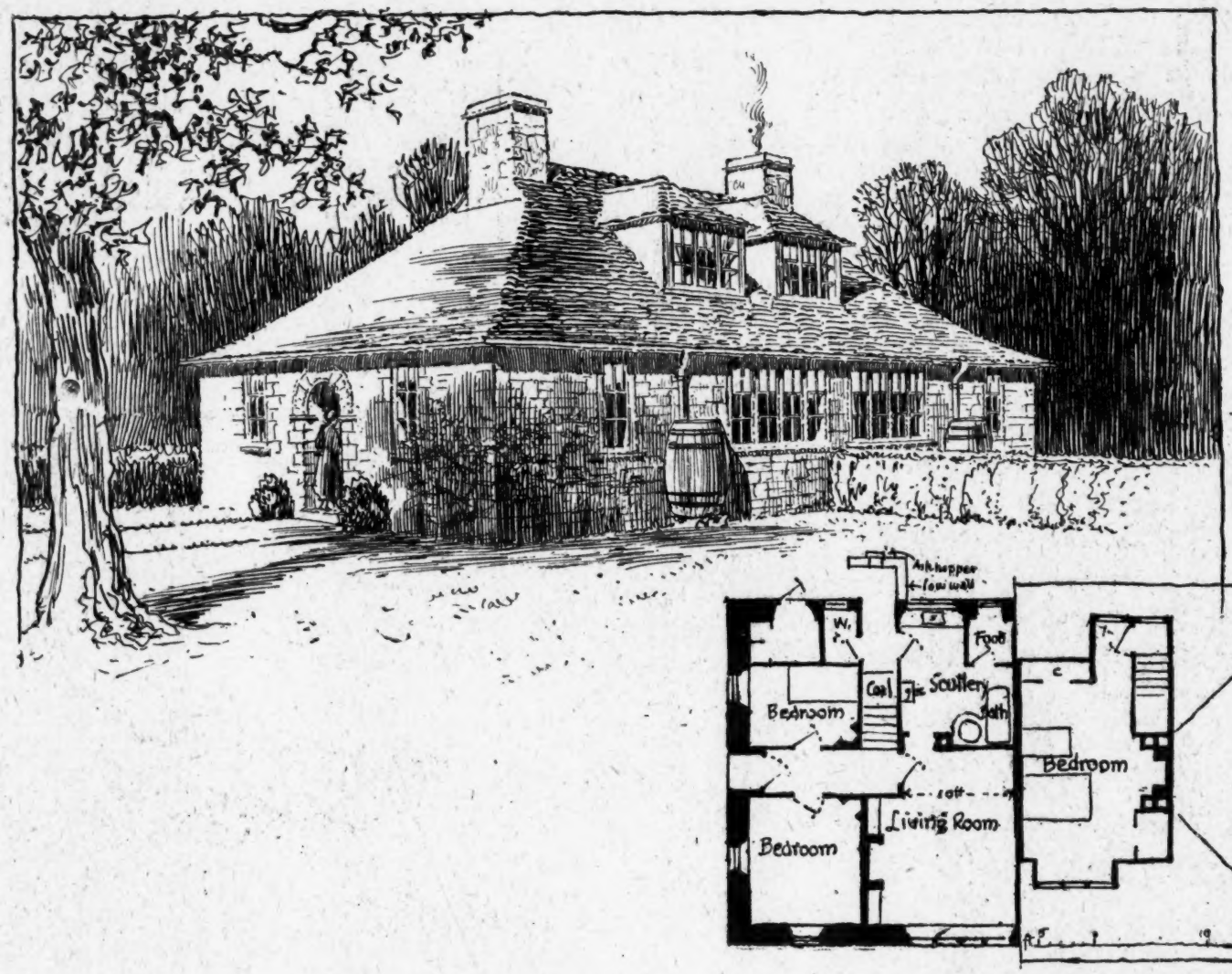

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CLASS D.—FIRST PREMIATED DESIGN, BY MR. F. B. DUNKERLEY, F.R.I.B.A.